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PRINCIPLES BEFORE PRACTICE: THE REFORM OF MEDICAL EDUCATION IN CINCINNATI BEFORE AND AFTER THE FLEXNER REPORT, 1870-1930

University of Cincinnati PH.D. 1983

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Principles Before Practice: The Reform of Medical Education in Cincinnati Before and After the Flexner Report, 1870-1930.

A dissertation submitted to the

Division of Graduate Studies and Research
of the University of Cincinnati

in partial fulfillment of the
requirements for the degree of

DOCTOR OF PHILOSOPHY

in the Department of History
of the College of Arts and Sciences

1983

by

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B.A., Wright State University, 1973

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UNIVERSITY OF CINCINNATI

May 11 19 83

I hereby recommend that the thesis prepared under my supervision by Ellen Corwin Cangi

entitled Principles Before Practice: The Reform of Medical Education in Cincinnati Before and After the Flexner Report, 1870-1930.

be accepted as fulfilling this part of the requirements for the degree of Doctor of Philosophy

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This transition did not occur without the help and love of my family. Early on my parents, Robert J. and Louise Corwin imbued in me a sense of curiosity and a will to succeed. Finally, this dissertation is dedicated to my husband, Joe, whose support has been complete and my children, Anne and Michael, whose mother has always been a student.

Abstract

In 1906, approximately 160 medical colleges existed in many medium-sized cities and small towns across America. Many of these were proprietary, most of them small, poorly equipped and ill-suited for educating physicians to then developing scientific medicine. By 1933, this number was reduced to sixty-six large medical schools where teaching was carried on in modern laboratories and research oriented hospitals.

Most historians are well-aware of the movement which provided the impetus for this extraordinary change in medical education. They know of the role played by the American Medical Association as well as the stunning impact of Abraham Flexner's report, Medical Education in the United States and Canada. Yet no one has studied the process of change which occurred within the medical profession both before and after the appearance of the Flexner Report in 1910. The roots of modern scientific medicine lie in this educational reorganization. This dissertation examines in detail the efforts of physicians and educators to effect a medical reformation in Cincinnati in the decades preceding and following the Flexner Report.

Early chapters sketch the nature of medical education in Cincinnati during the last quarter of the nineteenth century. Particular attention is given to the implementation of reforms at the Medical College of Ohio, predecessor to the University of Cincinnati College of Medicine. Later chapters deal with Ohio's merger with Miami Medical College in 1909 as well as the development of the Cincinnati General Hospital as a teaching hospital. Finally, three chapters examine in detail the issue of fulltime clinical medicine and its implementation in the departments of surgery, pediatrics and industrial medicine.

Introduction

In 1906, approximately 160 medical colleges existed in many medium sized cities and small towns across America. Many of these were proprietary, most of them small, poorly equipped and ill-suited for educating physicians to then developing scientific medicine. By 1933 this number was reduced to sixty-six large medical schools where teaching was carried on in modern laboratories and research oriented hospitals.

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sicians and educators to effect a medical reformation in Cincinnati in the decades preceding and following the Flexner Report.

Early chapters sketch the nature of medical education in Cincinnati, primarily at the Medical College of Ohio, during the last quarter of the nineteenth century. Like Harvard, Columbia's College of Physicians and Surgeons, and the University of Pennsylvania, the Medical College of Ohio introduced a graded curriculum in the 1870's, one which focused on providing greater laboratory instruction in the medical sciences. In their zeal for reform, faculty members also played an important part in establishing the American Association of Medical Colleges which encouraged member schools to adopt higher admission and graduation standards as well as a curriculum of uniform length and content.

Seeking to improve medical education, in 1896 the Medical College of Ohio became the Medical Department of the University of Cincinnati, an event which demonstrated medicine's new place in higher education. In its contract with the municipal university, Ohio's faculty indicated its willingness to be governed by the university's Board of Trustees, thus acknowledging the right of

society to a voice in medical education. For several years after that, however, the Medical College of Ohio continued much as before, the master of its own affairs. Then in 1904 Charles Wm. Dabney, a nationally known educator, became president of the University of Cincinnati. From the beginning he focused on the medical school as the linchpin in a modern university. Like his friend, Charles Eliot at Harvard, Dabney was determined to create a scientific medical college complete with laboratory facilities and a graded curriculum. For five years he sought to unite the city's two rival schools, Miami Medical College and the Medical College of Ohio, whose potential was stymied by their size and lack of funds, and bring both into the university. Finally in 1909 Dabney was successful in merging the two under the university's jurisdiction.

That very year Abraham Flexner inspected the new Ohio-Miami Medical College in the process of collecting data for his report to the Carnegie Foundation for the Advancement of Teaching. He was critical of the school's large unwieldy faculty, and of the inadequate clinical facilities at the old Cincinnati Hospital situated miles from the campus. He was particularly concerned that the

university lacked an organic relationship with the city hospital and consequently had no voice in its government. Nevertheless, because of Dabney's plans, Flexner gave the medical college a favorable review. In the decade that followed, Dabney and Christian R. Holmes, dean of the medical college, frequently sought Flexner's advice, especially regarding vacancies on the medical faculty.

In 1913 Flexner, now employed by the General Education Board, persuaded the board to make a generous grant to the Johns Hopkins Medical School in the name of William Henry Welch to endow chairs in medicine, surgery and pediatrics on the condition that the incumbents devote themselves entirely to teaching and research. Opposition to Flexner's experiment with fulltime medicine flared quickly. It was particularly strong at Harvard and at Columbia University's College of Physicians and Surgeons. Their faculties suspected that the small grants which they later received were a direct reflection of their opposition to Flexner. Conversely the board committed large amounts of money to Washington University, Yale and Vanderbilt in the cause of fulltime medicine.

In Cincinnati, Flexner found allies in Dabney and

Holmes. By 1920 the two had raised enough money privately to endow seven fulltime chairs. Anxious to help his friends, Flexner influenced the board to award a substantial grant of $700,000 to advance the progress of the University of Cincinnati College of Medicine. Just at the moment of success, however, two unfortunate events occurred to threaten the school's future. Holmes died and Dabney retired. Now, a void existed where there had once been creative leadership and strong support for the fulltime system. The practitioners in Cincinnati, who had long resisted Dabney's reforms, now attempted to destroy what Dabney and Holmes, with Flexner's help, tried to create, a research oriented medical college. The battle over fulltime clinical medicine raged throughout the twenties in Cincinnati. Events in three departments, surgery, pediatrics and industrial medicine were especially telling and present in microcosm the development of fulltime medicine in Cincinnati.

Issues such as fulltime medicine, the control of clinical facilities and the importance of laboratory sciences, all issues central to the reform movement in medical education, give us the opportunity to examine the

concerns of the past and to determine the roles of the medical profession and society at large, particularly philanthropists, and to draw some conclusions as to how our modern structure of medical education came to be.

Chapter I
A Fervor for Science: Illustration, Observation and the Pragmatic Approach to Education at the Medical College of Ohio, 1870-1900

I

The "revolution" in medical education, as Harvard President Charles Eliot termed it, began early in the 1870's. Unlike other more celebrated revolutions, which trace their origins to a singular event, the revolution in medical education did not begin in any one place. Nor was it fomented by a cadre of fiery rebels. On the contrary, concerned administrators in several American medical schools began quietly in the 1870's firt to tinker with and finally to remodel in its entirety the medical curriculum. Led as much by their own convictions as by the examples of their fellow educators, these men were prompted to act out of a new concept of medical education, one which they shared. Quite simply, they believed that the practice of medicine should be based on a firm set of theoretical principles, theories derived and proven scientifically.

Although the revolution did originate at any one school, its beginnings were most auspicious at Harvard, where Charles Eliot, the university's energetic young

president, vowed to take action against the deplorable state of medical education and practice then prevailing in this country. Everyday, he declared, people suffered and even died at the hands of poorly trained, even illiterate, physicians. Outraged, Eliot determined to reform medical education at Harvard. In a series of far reaching reforms, Eliot, with the advice of younger members of the medical faculty, including Dean Calvin Ellis, Henry Pickering Bowditch and John Collins Warren, all of whom had studied in Europe and returned full of enthusiasm for the scientific approach to medicine, rearranged the medical curriculum so that students first learned the fundamentals of science and progressed logically to their clinical application.

In the face of opposition from such medical professors as Oliver Wendell Holmes and Henry Bigelow, who feared the loss of personal power as well as income if the college should lose students, Eliot also lengthened the course of study from two to three years and ordered that examinations should be administered frequently to ascertain the student's degree of proficiency in each and every subject. In order to close all possi-

ble loopholes, Eliot also demanded that these and other reforms, including stricter admission standards, should apply to all students without exception.[1]

Eliot's revolution occurred in part at other American

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[1] Calvin Ellis, "Harvard University Medical Department: Changes in the Plan of Study and the Requisites for a Degree," American Journal of Medical Sciences 62: 303 (1871); "Important Changes in the Medical Department of Harvard University," Boston Medical and Surgical Journal 84: 284-285 (1871). See also, James C. White, M.D., "An Introductory Lecture Delivered before the Medical Class of Harvard University, Nov. 2, 1870," Boston Medical and Surgical Journal 83: 276-289 (1870). White, adjunct professor of chemistry, argued that in order to "elevate" medical education in America, it was necessary for each individual college to reform itself. See also, Charles E. Buckingham, M.D., "Medical Education in Harvard University," Boston Medical and Surgical Journal 85: 104-106 (1871). Buckingham, a Boston physician, insisted that once reforms were successfully carried out at Harvard, other leading medical colleges would be forced to follow suit or lose their best students to Harvard.

For an engaging account of Eliot's leadership, see Henry James, Charles W. Eliot, President of Harvard University, 1869-1909, 2 vols. (Cambridge, Mass.: Harvard University Press, 1930). For a description of Eliot's dealings with the medical faculty, see, V. I, pp. 273-274, 265. For a general history of the university, see Samuel Eliot Morrison, editor, Development of Harvard University Since the Inauguration of President Eliot, 1869-1929 (Cambridge, Mass.: Harvard University Press, 1930). Also, Thomas F. Harrington, The Harvard Medical School (New York, 1903).

medical schools as well. For example, as early as 1869, the Miami Medical College in Cincinnati introduced a longer and graded course of study. Fearing that students would go elsewhere to study, however, the faculty declined to make the new program mandatory.[2] Two years later the Medical College of Ohio likewise began to offer a similar program, likewise optional.[3] Similarly, in 1875, the College of Physicians and Surgeons of Columbia University lengthened its annual course of lectures and opened laboratories in which students could attend demonstrations in anatomy, physiology and chemistry.[4] The following year the Medical Department of the University of Pennsylvania began to require that students

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2 Annual Announcement of the Miami Medical College, 1869-1870 (Cincinnati, 1869), p. 5.

3 Annual Announcement of the Medical College of Ohio, 1871 (Cincinnati, 1871), p. 3.

4 A History of Columbia University, 1754-1904 (New York: Columbia University Press, 1904), pp. 320-322. Unfortunately no history of the College of Physicians and Surgeons in the late nineteenth and early twentieth centuries exists.

attend three courses, each graded and each ending with an examination, before qualifying for graduation.[5]

In order to appreciate the nature of the changes which occurred and the debates surrounding them, it is helpful to examine in depth the reforms made at one school, in this case the Medical College of Ohio. Founded in 1820 by Daniel Drake, the school was considered one of the nation's best medical colleges throughout most of the nineteenth century.[6] Consequently, conditions at the college in the mid-nineteenth century present an ideal contrast to reforms achieved at the end of the century, reforms which occurred not because of the deplorable state of the school, but rather were prompted by new concepts of medical education.

Known for keeping abreast of the times, the Medical College of Ohio moved in 1852 into a new building

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[5] See the University of Pennsylvania's announcement for 1876-1877 in the American Journal of Medical Sciences 72: 607 (1876). For a comprehensive history of the country's oldest medical school, see George W. Corner, Two Centuries of Medicine: A History of the School of Medicine, University of Pennsylvania (Philadelphia: University of Pennsylvania Press, 1965).

[6] Otto Juettner, Daniel Drake and His Followers (Cincinnati: Harvey Publishing Co., 1909), pp. 117-181; 204-288.

which was widely proclaimed as one of the best facilities of the day. Located on the periphery of downtown Cincinnati, the new college featured two large lecture halls and an anatomical museum which contained specimens collected throughout Europe and North America by Professor George Blackman, a noted surgeon. Cabinets displayed diseased bones, tumors and renal calculi together with wood, plaster and wax models of various parts of the human body. Another room in the building was especially equipped for anatomical dissections, a laboratory which, according to the faculty, was "fully equal" to the needs of the "most diligent and ambitious students."[7]

In the mid-nineteenth century, students who attended the new Medical College of Ohio already had considerable experience practicing medicine. According to the custom of the day, they came to medical school following an apprenticeship usually lasting three years. The typical apprentice lived in his preceptor's home and relieved him of much of his work, "sometimes professional [illegible] sometimes menial." Opportunities for clinical study

[7] Announcement of Lectures, Medical College of Ohio, 1855 (Cincinnati, 1855), pp. 11-15.

varied according to the size of the preceptor's practice. Assisting in his master's office, the young medical student learned to pull teeth, incise and drain abscesses, perform venesections, apply blisters, and administer emetics. The physician instructed his young assistant as they traveled about the neighborhood on their rounds and as they worked. In his spare time the apprentice read his master's medical books, however many he might own, and studied the few human bones or perhaps even an entire skeleton he found tucked away in the dark recesses of some closet.[8]

If he wanted to learn more about the practice of medicine, the apprentice might, but was not required to, attend medical school. Attendance was mandatory only if he desired the degree of medical doctor, a symbol of the learned man and an indication of rank in the community. Admission to the Medical College of Ohio, like other

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[8] Phineas Sanborn Conner, M.D., quoted by Juettner, p. 163.

medical colleges of the day, was extended to any apprentice who could afford the school's fees. The academic year began in mid-October and lasted until mid-February. Six days a week medical students came together to hear lectures on a full range of medical topics. There was no set order to the curriculum. Nor was any course considered either crucial to the curriculum or necessary for the student's comprehension of progressively higher ideas. Should a professor become ill or die, his lectures were simply dropped until a replacement could be found. Students could hear a few lectures or all of them, attend one session or two and still obtain all kinds of information useful in practice. Teaching was exclusively didactic. It was up to the student to listen, read textbooks, and memorize facts. In order to graduate it was necessary to attend two lecture sessions, one in anatomical dissection and one set of clinical lectures in the amphitheater of the city's Commercial Hospital, and pass a final general oral examination administered by the faculty.[9]

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[9] For a history of medical education in this country in the early nineteenth century, see William Frederick Norwood, Medical Education in the United States Before the Civil War (Philadelphia: University of Pennsylvania Press, 1944). See also, Martin Kaufman, American Medical Education: The Formative Years, 1765-1910 (Westport, Conn.: Greenwood Press, 1976).

II

This method of medical education proved satisfactory at the Medical College of Ohio for most of the nineteenth century. But in the 1870's satisfaction gave way to discontent as an increasing number of faculty members began to worry that students were no longer sufficiently prepared to practice medicine after two courses of lectures. The curriculum seemed at once disorderly and illogical, sadly out of step with the times. Furthermore, like the medical faculty at Harvard, Ohio's professors were convinced of the great utility which laboratory science held for medicine.

Under the leadership of Dean James Graham the faculty began to implement reforms based on their convictions and changing views of medical educaiton. Graham, who was considered one of the great clinical teachers of his day, was an effective reform leader. Unfortunately he became ill during the early 1870's and in 1874 handed over the reins of the deansnip to his like-minded colleague, Roberts Bartholow.[10]

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[10] Juettner, pp. 260-269.

Bartholow was perhaps the most vociferous advocate of the new practical method of teaching science. A graduate of the Medical Department of Maryland in the mid-1850's, Bartholow joined the Ohio faculty in 1862 as instructor of chemistry. From the beginning, both in his chemistry course and later in materia medica and therapeutics, Bartholow introduced demonstrations to complement traditional lectures. In 1874, he was appointed professor of medicine and again added illustrations to his lectures. An intense man, who struck his colleagues as cynical, Bartholow quickly cut down anyone who criticized his enthusiasm for the pragmatic approach in teaching medicine. Even before his election as dean, Bartholow appears to have led his colleagues in reforming Ohio's curriculum.[11]

Bartholow was by no means alone in his enthusiasm for change. He was joined by several others, the most important of whom was Phineas Sanborn Conner, a graduate of Jefferson Medical College in Philadelphia in 1861. Following the Civil War, Conner came to Cincinnati, where he taught surgery at the Cincinnati College of Medicine and Surgery before his appointment in 1868 as professor of

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[11] Ibid.

physics and medical chemistry at the Medical College of Ohio. Conner was unusual, for while still a professor at Ohio he accepted an appointment in 1875 as professor of clinical surgery at Dartmouth to teach during the spring and summer months. In 1877 he was appointed professor of surgery at the Medical College of Ohio. Like Bartholow, Conner was also keenly interested in research and contributed heavily to the literature of surgery. Unlike Bartholow, however, Conner was well-liked by his associates and therefore a useful ally for Bartholow[12]

Bartholow and Conner were assisted in changing the curriculum at the Medical College of Ohio by Thaddeus Asbury Reamy, an extraordinarily talented physician who began his instructional career at the Cincinnati College of Medicine and Surgery before the Civil War teaching materia medica. After serving with the Union Army, he returned to Cincinnati as professor of obstetrics and gynecology at the Medical College of Ohio. A natural teacher, who delighted his students with his own brand of humor, Reamy was especially adept at clinical instruc-

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12 Ibid., pp. 270-274.

tion. He remained on the Ohio medical faculty until his retirement in 1909.[13]

In the early seventies these men and other faculty members, including William W. Dawson, who was elected president of the Ohio State Medical Society (1871) and later of the American Medical Association (1888), adopted a new view toward medical education. They no longer saw it as a loosely related group of subjects but rather as a single discipline made up of courses, each one critical to the whole, each with its proper place in the curriculum. And while none of these champions of reform at the Medical College of Ohio studied science in Germany, they nevertheless appreciated its importance and ramifications for modern medicine in America. It was no accident therefore that they took special pains in appointing young instructors to the faculty who by training and interest were especially versed in various aspects of medical science. In 1875, for example, Frederick Forchheimer, who was initially trained at the

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13 Ibid., pp. 281-282.

College of Physicians and Surgeons in New York, and who later had a post doctoral term of study in Strassburg and Wurzburg, was appointed instructor in physiology. Two years later, Dr. Joseph Ransohoff, who as a student had captured the attention of the faculty by his talents at the dissecting table, was given a post as demonstrator in anatomy.[14]

During the seventies, the faculty of the Medical College of Ohio engaged in a dual purpose task, grading the curriculum and introducing laboratory sciences. In 1871, the faculty announced a new and optional curriculum, one especially intended for students who could afford both the time and the money for a more thorough preparation for the practice of medicine. These individuals were encouraged to begin their studies with courses in anatomy, physiology and chemistry during the first term; materia medica, medicine, surgery and surgical anatomy during the second term; and ophthalmology, obstetrics and clinics in every department during the third term. The new curriculum was designed so that students became acquainted first with certain physiological and pathological phenomena in the laboratory and later

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[14] For an analysis of the German influence on American medical education, see Thomas N. Bonner, American Doctors and German Universities (Lincoln, Nebraska: University of Nebraska Press, 1963).

observed their physical illustration in the clinic. Science, Bartholow insisted, was fundamental if students were to observe and comprehend all of the physical manifestations of disease. What better way to remember that the urine of a diabetic patient contained an inordinate amount of sugar than to observe this fact in a laboratory demonstration or to see for oneself the peculiar lesions of the gastrointestinal tract resulting from typoid fever. Laboratory demonstrations became a practical tool, assisting the student to develop his sense of observation and every bit as important as didactic lectures and textbooks.[15]

The pragmatic approach to medical education was critical if the Medical College of Ohio were to compare favorably to the Eastern schools, something the Ohio medical faculty desparately wanted. Such comparisons, Bartholow noted in disgust, "are not unfrequently made between the Eastern and Western schools of medicine

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15 Annual Announcement of the Medical College of Ohio, 1871, p.3. See also, "Extract from the Address of Professor Bartholow at the Commencement of the Ohio Medical College, March 3, 1876," Cincinnati Lancet and Observer XIX: 373-374 (April 1876).

unfavorable to the latter."[16] Piqued by such blatant unfairness, in 1872 Bartholow convinced the faculty and trustees to shed the stigma attached to being western by equipping a new chemical laboratory, which, he argued, placed the Medical College of Ohio in the "frontrank" of the nation's medical colleges when it came to practical instruction. The new laboratory in the end went a long way to support the Ohio faculty's claim that it was in fact one of the very few schools in the West capable of competing with Harvard, the University of Pennsylvania, and the College of Physicians and Surgeons. Only the very best colleges, they boasted, offered their students modern laboratories where they could observe a wide variety of chemical and physiological phenomena.[17]

Of all the laboratory sciences in the 1870's, chemistry seemed the most important and consequently received the most attention from the Ohio faculty. Indeed, new con-

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16 Ibid., "Extract..."

17 Annual Announcement of the Medical College of Ohio, 1872-1873 (Cincinnati, 1872), p. 5. See also, Annual Announcement of the Medical College of Ohio, 1874-1875 (Cincinnati, 1874), p. 4. Here the faculty assures students of the school's supremacy in the West.

cepts, particularly in the area of organic chemistry, atomic weights and the classification of compounds, were made known almost daily, causing one reviewer in the Cincinnati Clinic to declare that any textbook for a given year "will in a short time so far fall behind both in fact and theory as to fail to meet the wants of the student."[18] The promise of chemistry seemed so great that in 1874 the Medical College of Ohio appointed Dr. H.A. Clark as its first fulltime professor of chemistry. Clark devoted his "entire time" to lectures and laboratory demonstrations in which he taught students to recognize the principal constituents of the body's fluids and organic and inorganic poisons. In his spare time Clark performed a variety of chemical tests for the physicians of Cincinnati.[19]

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[18] Review of A Manual of Elementary Chemistry, Theoretical and Practical by George Fownes, F.R.S. Cincinnati Clinic I: 225-226 (Jan. 1870).

[19] Lancet and Observer XVIII: 320 (May 1874). The best general history on chemistry is by Aaron J. Ihde, The Development of Modern Chemistry (New York: Harper and Row, 1964). On the significance of chemistry in medical education, see James Whorton's essay, "Chemistry," in Ronald E. Numbers, editor, The Education of American Physicians: Historical Essays (Berkeley: University of California Press, 1980).

Although preeminent among the laboratory sciences, chemistry was by no means the only one taught at the Medical College of Ohio. In 1873, for example, the medical faculty also began to offer students practical instruction in both physiology and anatomy.[20] Despite liberalization of anatomical dissection by the state legislature in 1871, however, cadavers remained difficult to obtain. Therefore professors at the Medical College of Ohio as well as at most other American medical schools used cats and lower animals, such as frogs, to illustrate their lectures.[21]

Clinical demonstrations were equally as important as scientific instruction at the medical school. Each day a different professor lectured on selected diseases at the medical college's dispensary or in clinics at the Good Samaritan Hospital, which was

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20 Medical College of Ohio, Faculty Minutes, July 5, 1873. Students were obliged to buy tickets for practical instruction in anatomy, physiology and chemistry. However shortly after that, faculty minutes on July 10, 1873, noted that department of practical physiology would be disbanded until an instructor could be found. It should be noted that buying tickets was obligatory for that one year only. Policies were defined annually.

21 For a short history of anatomy in medical education, see John Blake, "Anatomy," in Numbers, The Education of American Physicians.

staffed exclusively by the Ohio medical faculty.[22] Students who chose the longer three year program spent their entire last year attending clinics and observing their professors at work in the hospital. But, all students attended clinics as part of their daily schedule from the time they entered medical school. In this way clinical instruction joined with practical demonstrations in the laboratories to make students aware of the impact of diseases on the body.[23]

The Cincinnati Lancet and Observer, a weekly medical journal, applauded developments at the Medical College of Ohio, congratulating the faculty on the expertise which it offered students in each and every medical

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22 Annual Announcement of the Medical College of Ohio, 1871, p. 6. See also, Ohio Faculty Minutes, March 3, 1874. and March 20, 1874. On the latter date Conner suggested that the title of clinical professor be added to didactic chairs so that those responsible for classroom lectures would also "demonstrate" the disease in the clinic. In the early seventies Ohio's students did not attend clinical lectures at the Cincinnati Hospital because of the faculty's continued exclusion from the staff there by the faculty of the Miami Medical College. The situation changed by 1877 when Conner and Longworth, professor of descriptive anatomy and clinical surgery were elected to the staff. See Annual Announcement of the Medical College of Ohio, 1877-1878 (Cincinnati, 1877), p. 10.

specialty. The days are gone forever, the journal exulted, when professors moved from chair to chair teaching the entire curriculum within the span of a single career. Now almost every chair at Ohio was occupied by a physician, "who had made a specialty of his department and to a great extent, ignores study in other directions."[24]

Go on, the journal pleaded with the faculty, make the three year program mandatory and advance the progress of medical science even further.[25] Ever fearful of losing students, however, the Medical College of Ohio declined to do so and sought another way of offering thorough preparation through "continuous college instruction," a program of independent study. Students known as college pupils spent a month at a time studying with individual professors until they had covered the entire curriculum. Because the course demanded a high degree of motivation and the ability to study with a minimum of guidance, admission

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24 Lancet and Observer XVIII: 311-314 (May 1875). See also an editorial in the Lancet and Observer XVIII: 47-52 which outlines "radical changes" which Cincinnati's medical schools ought to make including the adoption of the graded curriculum, higher standards of admission, endowed chairs and tuition to replace individual tickets sold by professors.

25 Ibid., XVIII: 311-314.

requirements included a bachelors degree, an indication, the faculty thought, of the candidate's maturity. Ohio thus became one of the nation's first medical colleges to require a bachelors degree for admission to one of its programs.[26]

Few expected and no one was really disappointed that hardly any students enrolled as college pupils. Still there remained little sentiment for a mandatory three year program. Instead, Barthalow and Conner set about grading and improving the quality of the two year course. By 1875 the basic curriculum began with anatomy, physiology and chemistry in the first year, clinical surgery, materia medica, therapeutics, ophthalmology, clinics and further laboratory studies in the second. Those who chose to do so could easily stay on for a third year of additional clinical work.[27]

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26 Annual Announcement of the Medical College of Ohio, 1875-1876 (Cincinnati, 1875), p. 3.

27 Ohio Faculty Minutes, Jan. 12, 1875. After 1880, the three year program was no longer separately described in the school's announcement. See Annual Announcement of the Medical College of Ohio, 1880-1881 (Cincinnati, 1880), p. 3.

Ohio's fervor for medical science was shared by medical educators elsewhere. In 1875, for example, Columbia University announced the opening of new laboratories for demonstrations in anatomy, physiology and chemistry. Three years later the university established yet another laboratory, this time for pathology.[28]

Only one year earlier the Medical College of Ohio had enlarged its chemical laboratory to accomodate sixty-four students. The additional space was necessary, the faculty explained in its annual announcement of courses, because of the "rapidly increasing demand for practical experience in chemical manipulation." If they wished, students could even learn how to use the spectroscope, microscope and other "appliances of physical and chemical investigation," and to conduct "qualitative analysis" of medicines, urine and other substances. They could also learn to write chemical formulas and solve equations. While professors still taught chemistry primarily by

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28 A History of Columbia University, p. 320.

29 Announcement of the University of Pennsylvania School of Medicine, 1876-1877, American Journal of Medical Sciences 72:607 (1876).

demonstration, students were now given the opportunity to practice scientific methodology.[30]

The proliferation of knowledge and the multiplication of science courses presented the faculty with a dilemma; how to increase the length of the curriculum without taking the risk of losing students. After some discussion, the faculty decided to assign some of the laboratory courses to the preliminary course, a period which lasted two to three weeks and preceded the opening of the fall session. Although the course was optional, Conner and the others hoped that Ohio's students had enough interest in science to attend. They were right; students eagerly signed up for the classes.[31] Laboratory courses were in fact so popular that in 1881 the faculty spent several thousand dollars to build "more commodious" rooms for the histo-

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30 Annual Announcement of the Medical College of Ohio, 1875-1876, p. 4. See inside of the back cover for a woodcut of the chemical laboratory.

31 The preliminary term began on Sept. 4 and the regular term on Oct. 2, lasting until March 1. Annual Announcement of the Medical College of Ohio, 1882-1883 (Cincinnati, 1882), p. 3. Two years earlier the Miami medical faculty had asked Ohio to go along with a plan, suggested by the American Association of Medical Colleges, to abolish the preliminary course and in its place to lengthen the regular term. The Ohio faculty declined. Not until 1883 did the preliminary term become part of the regular session. Annual Announcement of the Medical College of Ohio, 1883-1884 (Cincinnati, 1883), p. 3.

logical laboratory and to buy new equipment for the chemical and anatomical laboratories. Proudly, the faculty and students invited friends and alumni to inspect the new facilities at the opening of the fall session.[32]

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[32] Ohio Faculty Minutes, 1881. No specific date is noted in the minutes. See also, "Medical College of Ohio: Exercises at the Formal Opening of the Laboratories," Lancet and Clinic 46: 336-337 (Oct. 8, 1881). In 1876 the Lancet and Observer merged with The Clinic, a weekly medical journal published since 1871 to become the Lancet and Clinic which was published every Saturday. Eventually the word, "and," was replaced by a dash. The Clinic was edited by T. Reamy and advertized in Ohio's annual announcements. See, for example, Annual Announcement of the Medical College of Ohio, 1874-1875, p. 18.

III

The new concepts and educational methods which were transforming the Medical College of Ohio were revolutionizing other medical colleges as well. Consequently, in May, 1876, a small group of reform-minded educators invited others with similar interests to join them, when the A.M.A. met that summer, to consider forming an organization of reformed schools. The organizers were prominent medical educators including J.B. Biddle, dean of Jefferson Medical College in Philadelphia who, in 1838, helped found The Medical Examiner, one of the country's earliest medical journals. There was also J.T. Hodgen, dean of the St. Louis Medical College, who was elected president of the Missouri State Medical Society in 1876 and of the A.M.A. four years later. Biddle and Hodgen were joined by J. Adams Allen, professor of the principles and practice of medicine at Rush Medical College and editor of the Chicago Medical Journal; Wm. T.Mussey, dean of the Miami Medical College in Cincinnati and a noted surgeon; and W.T. Briggs, a founder of the American Surgical Association. Last, but certainly not least, there was J.M. Bodine, dean of the Medical Department of the University of Louis-

ville who helped organize and served as the first president of the Dansas State Medical Society.[33]

It is noteworthy that, like the older faculty members at the Medical College of Ohio, none of these men ever studied medicine abroad. To a man they were products of the American system of medical education, men who had achieved professional success and had contributed to the progress of medicine in this country, both through their organizational leadership and by means of their prolific contributions to medical journals. In the decades following the Civil War, they all became involved introducing reforms in their respective schools. Now, in 1876, the time had come to form an organization of reformed schools, institutions which set and adhered to

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[33] Little has been written about the history of the American Medical College Association and what is generally considered its successor, the Association of American Medical Colleges still in existence today. A brief article by the latter's secretary, Dean F. Smiley, traces the major events in the development of each. See "History of the Association of American Medical Colleges, 1876-1956," Journal of Medical Education 32: 512-525 (July 1956).

high standards and together would work to persuade other medical colleges to do likewise.

Twenty-two medical colleges answered the organizers' call and sent delegates to meet at Philadelphia's centennial fairgrounds on June 2, 1876. Immediately the convention elected Nathan Smith Davis, founder of the American Medical Association and a longtime enthusiast for reform in medical education, as president of the new organization. As early as 1849 Davis advocated the introduction of a graded curriculum at Rush Medical College but was defeated by the vehement opposition of several leading faculty members. In 1859, he managed to reform the Chicago Medical College, which alone held to his standards until other schools initiated reforms in the 1870's. Now he listened as delegates from other medical colleges acknowledged the need for stricter admission and graduation requirements as well as a graded curriculum. And he approved as they named their organization the American Association of Medical Colleges and set out to prove that America, like Germany, France and England, could also have first-rate medical schools.[34]

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[34] Ibid., pp. 512-513. Member schools included the College of Physicians and Surgeons, Bellevue Hospital College, Rush, the University of Michigan Department of Medicine and Surgery, as well as schools in Louisville, New Orleans, Nashville and Des Moines. Harvard Medical School did not join.

Many voices at the first convention of the association condemned a variety of flagrant abuses in evidence at all too many American medical colleges. For one, James Graham, professor emertius representing the faculty of the Medical College of Ohio, insisted that schools which continued to offer two complete sessions within the space of a single year, like the Cincinnati College of Medicine and Surgery, ought to be denied membership. Others condemned such practices as reducing or remitting fees to favored students, allowing them to receive a medical degree without fulfilling all of the stated requirements. Still others brought up the question of examinations, declaring that one final and general examination was woefully inadequate for determining a candidate's proficiency in every branch of medicine. Without a doubt the convention was committed to rectifying such appalling abuses, practices which usually characterized the avaricious diploma mills, none of which had been invited to attend The real issue, however, was whether delegates would agree with Davis, who insisted that it was time to adopt a "uniform system of instruction" in American medical colleges.

That system, he argued, should include three courses, each graded, each lasting twenty weeks. Despite their enthusiasm for reform, delegates were reluctant to go that far, and in the end, simply passed a resolution endorsing Davis' ideas. Rather than take responsibility for such stringent measures, they appointed a committee to canvas member schools soliciting their opinions regarding these and other measures to be included in the constitution and bylaws of the American Association of Medical Colleges.[35]

By the following June articles of confederation were ready and waiting when delegates met for their annual

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35 Ibid. See also Ohio Faculty Minutes, May 16, 1876 and Philadelphia Medical Times 5: 470 (June 24, 1876). The latter article reports that at the convention of the A.M.A. that year wild confusion broke out when a letter was read from the Medical Society of Virginia asking for a list of medical colleges recommended by the association. The nation's medical colleges, the article noted, were "a disgrace to the profession and their quarrels still more so..." For its part the A.M.A. concluded that it would be "unwise if not impertinent" to make any such list.

meeting at the Palmer House in Chicago. Already twenty-six medical faculties had carefully considered the suggested reforms. Consequently the convention conducted its work quickly and efficiently. Delegates decided that in order to graduate, students attending member schools were required to attend two full courses of instruction and pass examinations given in each and every subject. Although the association's members were quite certain of the value of the graded curriculum, few among them were willing to add a third year and risk losing students to less demanding schools.[36]

The faculty of the Medical College of Ohio was in full accord with actions taken by the American Association of Medical Colleges.[37] In fact, the Ohio medical faculty was ready to go even farther than the organization to guarantee the preparation of its graduates. Under Dean Bartholow's guidance the college reached an agreement in 1877 with the University of Cincinnati which allowed medical students to

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36 Ibid., Smiley, p. 513.

37 Ohio Faculty Minutes, Sept. 20, 1877. The faculty voted to "join with" the association as an active member. Miami Medical College joined in 1878 and the Cincinnati College of Medicine and Surgery, then in the midst of reorganizing its curriculum and upgrading its standards, in 1879.

pursue scientific studies in chemistry, physics, zoology or even geology at the university, all free of charge. Besides science courses, students could attend any classes in the academic department as well. Both Bartholow and Jacob Cox, president of the university, clearly recognized that the wide variety of disciplines found in the university would greatly enhance the necessarily narrower curriculum of the medical college.[38]

It is entirely possible that Bartholow was motivated in his actions by the rapidly rising costs of scientific education and hoped that in the not too distant future some arrangement might by made whereby the Medical College of Ohio could make use of the university's laboratories. The question of the rapidly escalating cost of medical education was in fact so important that it very nearly monopolized early sessions of the American Association of Medical Colleges in Atlanta in May, 1879. Shortly after it convened, Wm. Dawson, who succeeded Bartholow as dean of the Ohio faculty in 1879, wired home asking for his colleagues'

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[38] Annual Announcement of the Medical College of Ohio, 1877-1878, p. 8.

reaction to the question of raising fees at member schools. Quickly and without debate the Ohio faculty voted to "go as high" as other members were willing.[39] A veteran negotiator, Dawson managed to arrive at an agreement with Miami Medical College, Ohio's chief rival in Cincinnati, as well as with competing schools in Louisville and Indianapolis, to raise fees to $75 for each professor's ticket, an increase of $35.[40] Before the agreement became public the Cincinnati Lancet and Clinic, a new weekly medical journal, urged the medical colleges in Cincinnati to go ahead and raise fees. "The days are gone, if they ever existed," an editorial chided the medical faculties, "of underbiding Eastern schools to obtain support." What attracted students, the journal insisted, was quality medical education![41]

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39 Ohio Faculty Minutes, May 5, 1879.

40 Ibid., May 19, 1879.

41 Cincinnati Lancet and Clinic 42: 199-200 (Sept. 6, 1879).

The question of fees was settled with relative ease. More vexing, however, were issues of increasing admission requirements and persuading members to adopt three courses in place of the traditional two. Change did not come easily. Dawson and Dean John A. Murphy from the Miami medical faculty attended the Atlanta meeting together and reported to their colleagues back home that, after considering Davis' annual plea, delegates endorsed the resolution for three years and three courses but "upon the necessity or rather advisability of taking these steps now (there) seemed to be some diversity of opinion." While some delegates from southern and western schools, excluding both Ohio and Miami, favored such changes, the association hesitated to act because of the overtly hostile resistance of some of the large eastern colleges, primarily Jefferson in Philadelphia and the College of Physicians and Surgeons in New York City, schools which many feared would bolt the organization if the issue were forced.[42]

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[42] "Special Correspondance," Lancet and Clinic 41: 365-367 (Sept. 26, 1879).

Adding to the charged atmosphere was the revelation that many members were not even in compliance with existing rules of the association. Upon examination of the annual announcements of members, a committee found many in violation, "some radically others merely technically." For example, Dartmouth's Medical Department resigned rather than increase its course of fourteen weeks to the prescribed five months. And a medical college in St. Joseph, Missouri withdrew its application for membership, preferring to recognize four years of medical practice as the equivalent of one full course of lectures. And a medical faculty in Louisville, Kentucky was found to be occupying positions in two different colleges, giving lectures in one place in the winter and the other during the spring and summer months. This, the association insisted, amounted to offering two courses in one year, a clear violation of the by-laws. At issue was whether or not member colleges would enforce the organization's rules. In simply too many instances it appeared that rules were neither reasonable nor in keeping with an individual school's best interests. Until they were the

American Association of Medical Colleges was by no means ready to adopt a uniform structure of medical education.[43]

Despite such revelations Davis remained doggedly persistent in his three courses-three years argument, and in his fervor managed to persuade an increasing number of delegates to his point of view. The showdown finally came in 1880 at the association's meeting in New York City. To Dawson's amazement, he stood in the minority as the convention gave Davis an overwhelming victory, passing his resolution twenty to five. Immediately, as many predicted earlier, representatives from the College of Physicians and Surgeons, Jefferson, and Bellevue Medical College stormed out of the meeting in protest.[44]

Convinced of the association's usefulness, however, and wishing to preserve it, Dawson declined to resign and join his fellow dissenters. Instead, he advised W.W. Seely, who succeeded him as dean in 1881, on ways to reverse the association's vote and, at the same time

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43 Ibid.

44 Smiley, p. 513-514. See also Ohio Faculty Minutes, May 28, 1880. The faculty voted to instruct its delegate to vote "no" on the resolution to require three courses after the 1882-83 academic year.

to hold it together. Dean Seely faced a seemingly impossible task. However, Dawson advised him that many of the delegates were acting without the assent of their faculties when they gave Davis his stunning victory. Dawson suspected that events would prove that members had no intention of going along with the new rule. Acting on this knowledge, Seely consulted with his counterparts at Miami and the newly reformed Cincinnati College of Medicine and Surgery to plan what action they should take. The three vowed first of all to fight to reverse the three year rule by convincing members to revoke their earlier votes. Should that fail, Seely resolved, Ohio too would resign from the association.[45]

After a two-year hiatus, the association met in Cincinnati in conjunction with the annual meeting of the A.M.A. in 1882. To the great disappointment of Seely and the others, only eleven schools sent delegates to the opening session at the Medical College of Ohio. As

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[45] Ohio Faculty Minutes, April 19, 1881. The three deans conferred on other matters as well such as deciding what exactly constituted a full course in medical school and agreed to require that all second and third year students attend clinics at the Cincinnati Hospital.

a compliment to their host and in a vain attempt to reconcile their absent fellows, the delegates elected Dean Seely president of the association. Unfortunately, the effort failed and the association was abandoned, shipwrecked on the rocks of the three-year rule.[46]

The Lancet-Clinic angrily blamed the prestigious Eastern schools for the organization's demise, schools whose rich endowments, the journal claimed, could have helped endured the loss of students they might have suffered due to stricter requirements. However, the loss of revenues, no matter how loudly the protesters insisted, was not the real reason behind the association's death.[47] Quite simply, the majority of medical colleges, including Ohio and Miami in Cincinnati, were not yet convinced that all medical students needed to study for three years

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46 Smiley, p. 514.

47 "American Medical College Association," Lancet and Clinic 47: 520-521 (June 10, 1882).

before embarking on the practice of medicine. They claimed that many in fact were well-prepared for practice after only two years. At any rate, they felt, it was an individual judgment to be decided by the student and his advisors. Consequently, many schools, like the Medical College of Ohio, continued to offer both programs. In the end, undue fervor, not shared by the majority of medical educators, cost the American Association of Medical Colleges dearly; it would be seven years before another coalition of medical colleges attempted to band together in the cause of reform.

IV

Although the Ohio medical faculty refused to make the three year curriculum mandatory, it was nonetheless curious as to exactly how many students would chose to remain for the third year. In 1882, James Hyndman, secretary to the faculty, reported that only eleven students chose the longer program.[48] Two years later, however, the number had risen to twenty-three out of a total enrollment of 189, but by 1885 it had dropped to fifteen.[49] To faculty and students alike, it appeared that the two year curriculum was sufficient.

Despite their reluctance to add a third year, the Ohio medical faculty was nevertheless determined to strengthen its medical curriculum. In 1883, the preliminary course, consisting primarily of laboratory courses, was replaced by an extended regular session beginning early in September. The laboratory sciences were no longer optional but

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48 Ohio Faculty Minutes, March 7, 1882.

49 Ibid., March 14, 1884 and March 19, 1885.

a necessary component of the curriculum.[50] In addition, that very same year students were also required to begin attending two sessions of clinical lectures and to perform two complete anatomical dissections before graduation.[51]

While strictly enforced graduation requirements defined the termination of one's medical education, there were also new entrance examinations to indicate the exact qualifications needed to enter medical school. In 1884 the Medical College of Ohio began to administer entrance examinations in mathematics, science, and English to all applicants who did not hold a bachelor's degree or teacher's certificate.[52]

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50 Annual Announcement of the Medical College of Ohio, 1883-1884, pp. 3-4.

51 Ohio Faculty Minutes, May 13, 1883.

52 Annual Announcement of the Medical College of Ohio, 1884-1885 (Cincinnati 1884), p. 21. See also Ohio Faculty Minutes, March 1, 1884. Conners called for increased requirements for preliminary education as well as more difficult final examinations. See also "The Elevation of the Standard of Preliminary Education," Lancet-Clinic 49: 301-303 (March 8, 1884). A resolution was presented at a meeting of the Ohio State Medical Society urging Ohio to require more preliminary study as did the state of Pennsylvania and some Eastern schools. See also "Report to the Medical Society of New Jersey of Special Committee on Preliminary Education," Journal of the American Medical Association II: 577-579 (May 24, 1884).

That very same year, at the urging of the Ohio State Medical Society, the state legislature created the Ohio State Board of Medical Registration and Examination. Although the board acted in its early years only to register practicing physicians, there was from the start growing sentiment for the board to take an active hand in setting admissions requirements. For its part the Medical College of Ohio established strict admission requirements after learning that some of its graduates had been denied licenses to practice medicine in the state of Illinois. In an effort to upgrade medical practice there, the Board of Health demanded proof that medical graduates had attended schools with proper admisssion standards. The Medical College of Ohio quickly implemented the rules necessary to meet Illinois' requirements, which were after all incontrovertible if one accepted medicine's place in higher education.[53]

There seemed little doubt as to the status of medical education in 1887 when President Jacob Cox and the Board of

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[53] Ohio Faculty Minutes, April 19, 1884. See also Austin Flint, Sr., M.D., "Annual Address," JAMA II: 505-513 (May 10, 1884). Flint discusses at some length the need for stricter admission standards in American medical colleges. He was president of the A.M.A. that year.

Trustees of the University of Cincinnati invited both the Medical College of Ohio and Miami Medical College to affiliate with the university. The invitation was extended to other institutions of higher learning as well, including the Cincinnati College of Law, the Clinical and Pathological School of the Cincinnati Hospital, the city's pharmaceutical and dental colleges, and even St. Xavier's College. Cox and the board of trustees of the university hoped to bring together the city's independent schools to create a great university and make Cincinnati a true "center of higher learning."[54]

The impulse to prove that Cincinnati still merited the old title of "Queen City of the West" was clearly of secondary importance in the Medical College of Ohio's decision to accept the board's invitation. Nor was the faculty motivated by practical advantages, for affiliation simply meant that medical students could continue to attend classes at the university if they wished. Rather affiliation was a public acknowledgment that medicine was a subject whose study was not to be entered upon lightly, but an organized discipline of higher education depen-

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[54] "Circular," May 4, 1886, University of Cincinnati Board of Trustees Minutes. Jacob Cox became president of U.C. one year earlier on April 20, 1885.

dent on specific knowledge and requirements. Significantly, after affiliation, the university and medical college together granted the M.D. degree to graduates of the Medical College of Ohio. Affiliation with the university was largely symbolic and had few practical ramifications for the Medical College of Ohio.

Of greater importance were laboratory courses in the newly emerging medical sciences of physiology, experimental pathology and bacteriology. Medical sciences by the mid-eighties not only promised to show the structure of the body but to demonstrate the normal and abnormal workings of the body and ultimately the specific causes of a variety of diseases. The new rationale became evident in 1884 when the Medical College of Ohio introduced three separate and progressive courses in chemistry in place of the earlier basic courses. Inorganic chemistry was designed to introduce students to the "principal facts and fundamental principles" which would help them understand how to perform basic diagnostic tests, like the urinalysis, in the following course. In yet a third course, physiological chemistry, students became more aware of the body's dysfunction in disease.[55]

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[55] Annual Announcement of the Medical College of Ohio, 1884-1885 (Cincinnati 1884), p. 11.

This shift in the Ohio faculty's view of the utility of medical science occurred without fanfare, in fact almost unconsciously. Now instead of urging students to observe the physical manifestations of disease, they encouraged them to search out their causes. In 1887 the school's catalogue contained a long, carefully reasoned statement concerning the new bacteriology laboratory. Bacteria, it said,

> play an all-important role in the aetiology of the infectious diseases, and since these diseases are responisble for more than one-half of the sickness and death of the human family, and since a rightly conceived aetiology is necessary not only to the prophylaxis, but also to the accurate dianosis and rational treatment of disease, it foldows that a medical school that does not offer to its students an opportunity to study this important branch of pathology, does not come up to the requirements of the times.
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56 Annual Announcement of the Medical College of Ohio, 1887-1888 (Cincinnati 1887), p. 13. On the development of microbiology, see Paul De Kruif, Microbe Hunters (New York: Harcourt, Brace and Co., 1926). Also, Patrick Collard, M.D., M.Sc., F.R.C.P., The Development of Microbiology (Cambridge, England: Cambridge University Press, 1976). Also, Charles Singer and E. Ashworth Underwood, A Short History of Medicine, 2nd edition (New York: Oxford University Press, 1962), pp. 379-409.

Shifting the student's attention to the cause and effect of disease opened a whole new real of responsibilities and possibilities for physicians. Not only could the properly educated doctor now treat disease, he was also prepared to take certain steps for its prevention. Without a doubt, bacteriology increased the physician's usefulness to society. No longer simply responsible to and for the individual patient, the modern doctor became accountable to the whole of society, which depended on him to stop the spread of dangerous contagious diseases.

Motivated by new concepts of scientific medicine, the Medical College of Ohio announced in 1888 that beginning in 1891 three years of study would be required for the medical degree. The longer curriculum was arranged so that students progressed from simple principles of science to their application in the clinical setting. In fact, the growing importance of clinical experience mandated the addition of the third year of study. The stage was now set for the issue of the university's control over its own teaching hospital in the decades after the turn of the century.[57]

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[57] Annual Announcement of the Medical College of Ohio, 1888-1889 (Cincinnati 1888), p. 20.

By the late eighties, the Medical College of Ohio, like many other American medical schools, had settled the issues of the curriculum and requirements for admission and graduation. Thus Ohio's faculty responded with enthusiasm to a letter from a group of medical professors from Baltimore proposing a new organization to bring about a "national" advance in the reform of medical education. Along with Johns Hopkins Medical School, the University of Michigan and Rush Medical School, the Medical College of Ohio sent a representative to a meeting held in Nashville, Tennessee, in May of that year. Representatives lost no time in forming the Association of American Medical Colleges based on the belief that the medical curriculum ought to be at least three years in length with clearly defined admission requirements, a strict schedule of examinations, and laboratory instruction in each of the medical sciences.[58]

Members like the Medical College of Ohio and Miami Medical College were completely convinced of the role of science in medical education. The organization's name,

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[58] Smiley, p. 515.

the Asspcoatopm pf American Medical Colleges, indicated that a certain number of schools in this country had arrived at a consensus as to what a medical school should be and how it ought to be conducted. Now members set out to persuade other medical colleges of the new scientific approach to medical education.

By the end of the nineteenth century, the foundations of modern scientific medical education and indeed expectations for its ultimate promise in practice were clearly evident at the Medical College of Ohio as well as at other American medical schools. Now more certain of themselves, their goals, and their methods, reformers framed new issues regarding clinical teaching, hospital affiliation and scientific research, issues which would be debated and settled within the newly defined parameters of scientific medicine.

Chapter II
New Relationships, New Obligations: The Medical College, the University and the State, 1896-1902

I

Just before the turn of the century, in 1896, the Medical College of Ohio moved from its old location downtown into what had previously been the academic building of the University of Cincinnati. the four story brick structure on McMicken Ave. in Clifton was completely renovated for its new tenant. Former classrooms were turned into science laboratories, a Roentgen machine was installed, and next door the medical faculty built a clinic with its own clinical laboratory, pharmacy and eight examination rooms.[1]

Ohio's move from downtown resulted from an agreement whereby the Medical College of Ohio became the Medical Department of the University of Cincinnati. The new relationship negated the old informal affiliation between the city's three medical colleges and the university. The Medical College of Ohio alone became an integral part of the university, subservient to the larger institution's board of trustees. Although unprecedented in Cincinnati, the Medical College of Ohio's action was by no means

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[1] "Inspected, The Ohio Medical College: A Splendid Institution of which the City May Well Be Proud," Cincinnati Enquirer, no date, Faculty Minutes of the Medical College of Ohio, Oct. 18, 1896.

unique in the United States. For example, during the winter, of 1891, the College of Physicians and Surgeons in New York City, whose union with Columbia University had been merely nominal since 1860, relinquished its property to the parent institution, thereby giving Columbia an active voice in its affairs. Equally revealing is the fact that in 1900, the Johns Hopkins School of Medicine, since its establishment in 1893 part of the university, changed its name to the Medical Department of the Johns Hopkins University. The new title more accurately described the medical school's subordination to the university.[2]

The agreement which took place between the Medical College of Ohio and the University of Cincinnati occurred as a result of the university's dissatisfaction over the fact that it had no role in governing any of the city's three medical schools. Consequently in 1895, the board of trustees sought to terminate its earlier contracts of affiliation with Ohio, Miami and the Cincinnati College of Medicine and Surgery. The university hoped to consolidate the three medical colleges into a single department. Upon request, all three of the affiliates agreed to dissolve

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[2] The relationship between the Johns Hopkins Medical School and the Johns Hopkins University is richly detailed by Alan Chesney in his three volume history, The Johns Hopkins Hospital and the Johns Hopkins University School of Medicine: A Chronicle (Baltimore: Johns Hopkins University Press, V. I, 1943; V.II, 1958; V. III, 1963).

their contracts with the university. However, the trustees, led by C.A.L. Reed, a prominent Cincinnati surgeon, quickly encountered heavy opposition from the various medical schools when they revealed their plan for consolidation and the impracticability of such a course of action became obvious to all involved.[3]

Failing that, the trustees set their sights on the oldest and best known of the city's three schools, the Medical College of Ohio.[4] Finding the medical faculty receptive to consolidation, the university initiated negotiations shortly after the start of the new year in 1896. Although meetings between officials of the two institutions were cordial, it was nevertheless immediately apparent that the medical faculty was determined to preserve as large a degree of autonomy as possible in directing its own affairs.[5]

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[3] For the dissolution of the contracts, see Minutes of the Board of Trustees, May 21, 1894 and June 18, 1894. Also May 20, 1895 and Feb. 17, 1896, the latter containing the Committee on the University's Report on the "Organization of a Medical Department," presented by C.A.L. Reed.

[4] Ibid., committee report.

[5] Ohio Faculty Minutes, Jan. 11, 1896.

Phineas S. Conner, an old hand at rallying his medical colleagues to his point of view, attempted to prove to the university's trustees that the demands of the medical faculty for autonomy were neither arbitrary nor excessive, but in fact, provisions agreed upon by Harvard and Yale and their respective medical departments. For example, he pointed out that until those medical schools became endowed they remained responsible for conducting their own financial affairs, collecting fees, disbursing funds and paying salaries. Until the University of Cincinnati could totally support the Medical College of Ohio, Conner insisted, the medical faculty should remain the master of its own financial affairs.[6]

Clearly aware of the implications of such an arrangement, the trustees refused Conner's demand and negotiations reached an impasse. However, Reed, who was elected president of the A.M.A. in 1900 on the basis of his commitment to reform, managed at last to convince his colleagues on the board of trustees to adopt a "broad and catholic

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[6] Letter of January 17, 1896 from Alfred B. Benedict, secretary of the committee on the University to W.W. Seely, transcribed in Ohio Faculty Minutes, Feb. 8, 1896.

policy toward the medical faculty's desires."[7] He suggested that an executive committee of the medical faculty should be created comprised of the professors of anatomy, physiology, chemistry, materia medica, surgery, obstetrics, and medicine, and that it ought to recommend fees to the university's trustees for approval. In addition, the executive faculty, as it came to be called, would have charge of collecting and depositing fees in the city's treasury to the "exclusive credit" of the medical department. After that, the university's directors would appropriate funds but only on the advice and consent of the executive committee of the medical faculty. Moreover, at the end of each academic year, the medical faculty would, as it had traditionally, divide the remaining money among its members. Almost at once, the medical faculty accepted Reed's plan. Under it, only full professors, longtime faculty members like Conner, Frederick Forchheimer, Joseph Ransohoff and Benjamin Rachford, men who ostensibly had the school's best interests at heart, would have

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[7] Ohio Faculty Minutes, Feb. 8, 1896.

a vote in making policies. Moreover, the rule negated the possibility that at some future date the board of trustees might manage to change the department's policies by garnering sufficient votes among junior faculty members and instructors eager to please the university.[8]

For its part, the board of trustees reluctantly accepted Reed's plan. For the moment Conner appeared to have won. However, with an eye to the future, the trustees included a provision in the contract with the Medical College of Ohio stating that whenever conditions permitted the board of trustees would not only pay the faculty's salaries but would also assume management and full responsibility for the department's financial affairs.[9]

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[8] A conference was held between the two institutions on Feb. 10, according to a note added to the faculty minutes of Feb. 8, 1896. See also. Reed's committee report.

[9] Ohio Faculty Minutes, Feb. 14, 1896. The faculty was divided into general, special and clinical chairs with the agreement that special and clinical positions be filled as the need arose. Thirteen special chairs were established in histology and embryology, pathology, bacteriology, gynecology, ophthalmology, otology, laryngology and rhinology, pediatrics, surgical anatomy, dermatology and syphilography, hygiene, neurology and psychiatry, and orthopedics. The faculty agreed that no member would teach at any other medical school. Clinical chairs were created in medicine, surgery, obstetrics, gynecology, ophthalmology, otology, laryngology and rhinology, pediatrics, dermatology and syphilography, neurology and psychiatry, and orthopedics.

Convinced of the desirability of union between the university and the Medical College of Ohio, the board of trustees treated the medical faculty kindly in regard to its other demands as well, acquiescing in almost every one. For instance, the board agreed that appointments to the medical faculty could be made only on the executive committee's recommendation. In addition, the executive medical faculty was given complete freedom to write its own educational policies and to administer internal affairs as it saw fit. In return, the medical faculty agreed to transfer all of its property to the university on the condition that the property and its laboratories would be reserved solely for the use of the medical department.[10]

The contract signed by the Medical College of Ohio and the University of Cincinnati on April 20, 1896 was no mere affiliation made in the interests of harmony to be abandoned at the whim of either party. Rather, by its own agreement the Medical College of Ohio became an organic part of a hierarchical institution and acknowledged the supremacy of the university's board of trustees in perpetuity. By their actions both the univeristy and the

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[10] Ohio Faculty Minutes, Feb. 14, 1896.

medical faculty recognized that medical education was not only part of higher education but that in fact it should subordinate itself to the larger parent institution thereby ultimately accepting direction from laymen and society at large.[11]

As proof of the permanence of its incorporation into the university, the Medical College of Ohio altered its seal. A gold disk, the seal originally featured a picture of Daniel Drake encircled by the school's name and date of founding. It was changed so that the new name, Medical Department of the University of Cincinnati, was added to the periphery. In addition, the medical department's annual announcements carried both names and continued to be numbered from 1819. Each year's edition also featured a brief history of the school from its founding to its merger with the university. In this way, the medical college's past and cherished traditions were preserved to become

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[11] "Agreement between the Medical College of Ohio and the City of Cincinnati," April 27, 1896.

part of the history of the University of Cincinnati.

Merger with the university was not the only development which affected the Medical College of Ohio in the mid-nineties. Under the guidance of Conner, who was on the leading edge of the reform movement in medical education by his active participation in the Association of American Medical Colleges, a new four-year curriculum was introduced in 1895. In accord with policies of the association, which Conners helped to devise, the curriculum allowed for more time in clinical work, with students rotating through each of the many medical specialties such as dermatology, genito-urinary diseases and orthopedics. There was even time for electives so that students could develop and pursue their own interests in the new age of medical specialization.[12]

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[12] "The Association of American Medical Colleges," Bulletin of the American Academy of Medicine, April 1894, pp. 476-478. Conner served on the committee with Nathan Smith Davis, Wm. Osler of Johns Hopkins, Victor C. Vaughan from the Univeristy of Michigan and chairman, E.L. Holmes of Rush Medical College in Chicago. The committee decided that members had to require either three courses of eight months or four of six months each held in a separate year. The subcommittee of which Conner was also a member, then set forth the medical curriculum in detail. To compare the old and new programs at Ohio, see Annual Announcement of the Medical College of Ohio, 1895-1896 (Cincinnati 1895), pp. 7-8 and Annual Announcement of the Medical College of Ohio, 1897-1898 (Cincinnati 1897), pp. 7-8.

While the medical faculty was clearly reform minded, it was not particularly liberal, not at least in the matter of admitting women to the department. In 1897, shortly after merger, the faculty entertained the question of admitting women but was unable to reach a decision. The executive faculty thereupon referred the question to the university's board of trustees. In September 1898, the board decided that indeed women ought to be accepted. The fact of the matter was, however, that the majority of the medical faculty had, in the interim, decided against admitting women. So the faculty, free to conduct itw own affairs,[13] ignored the board's decision.

The faculty's action, or lack of it, was not necessarily made out of some mean desire to deny women the right to study medicine. Rather, the faculty members, like many of their contemporaries, were convinced that

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[13] Ohio Faculty Minutes, Oct. 15, 1897; Nov. 5, 1897; and Dec. 18, 1897. See also Board of Trustees Minutes, Jan. 15, 1894. For a fuller account of women studying medicine in Cincinnati, see Ellen Corwin Cangi, "Patrons and Proteges, Cincinnati's First Generation of Women Doctors, 1875-1910," Cincinnati Historical Society Bulletin 37: 89-114 (Summer 1979).

it was somehow unseemly for women and men to hear lectures on such delicate subjects as anatomy and gynecology in each other's company.[14] And, it was not that Cincinnati lacked faculities for women to study medicine. In 1883, the Cincinnati College of Medicine and Surgery, then recently reformed under the leadership of C.A.L. Reed, opened its doors to women. For three years women matriculated at the college and during that time seven graduated. Then, apparently uncomfortable with coeducation, the faculty decided to segregate the women.[15] In 1886, the Woman's Medical College of Cincinnati opened under the auspices of the Cincinnati College of Medicine and Surgery. Like their male counterparts, the female medical students were provided with a full curriculum by the same faculty and attended clinics at the Cincinnati

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14 This attitude is explored by Mary Roth Walsh in Doctors Wanted No Women Need Apply," : Sexual Barriers in the Medical Profession, 1835-1975 (New Haven, Conn.: Yale Univ. Press, 1977). See also Barbara Harris, Beyond Her Sphere: Women and the Professions in American History (Westport Conn.: Greenwood Press, 1978).

15 Minutes of the Board of Trustees, Cincinnati College of Medicine and Surgery, Feb. 24, 1886 and Sept. 5, 1886.

Hospital. There was, however, one major difference: The faculty stressed the importance of obstetrics, gynecology, and pediatrics in its belief that women doctors would and should practice for the benefit of other women and their children.[16]

The Woman's Medical College of Cincinnati was not the only institution which emphasized a limited practice for its students. In 1890, the Woman's Medical College of the Presbyterian Hospital was established as an expansion of a free dispensary for women and children in Cincinnati. Although two women doctors, Mary E. Osborn and Juliet Thorpe, were responsible for founding the college, they quickly turned to men known for their professional achievements as well as their encouragement of women physicians for guidance. Dr. John C. Oliver, a prominent surgeon and member of the faculty of Miami Medical College, taught surgery. His colleague, Dr. John Withrow, taught gynecology, and Dr. C.D. Palmer,

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16 Announcement of the Woman's Medical College of Cincinnati, 1889 (Cincinnati, 1889), p. 6.

a member of the Ohio faculty, taught obstetrics.[17]

Despite an excellent faculty and high standards, the Woman's Medical College of the Presbyterian Hospital remained small, graduating only three students in 1893 and four the following year. The Woman's Medical College of Cincinnati experienced similar problems attracting students. In addition, both faced the ever increasing expense of financing scientific laboratories and finding adequate clinical facilities. Therefore in 1895, the two schools decided to merge to form the Laura Memorial Woman's Medical College, which was generously endowed by Alexander McDonald, a wealthy Cincinnati businessman, in memory of his daughter. Dr. John Withrow was elected dean of the faculty, which was composed of professors both from Miami and the Cincinnati College of Medicine and Surgery.[18] Although Ohio professors had in the past taught at the women's colleges, a pro-

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[17] Otto Juettner, Daniel Drake and His Followers (Cincinnati: Harvey Publishing Co., 1909), pp. 430-431. Also "Patrons and Proteges..."

[18] "The Laura Memorial Woman's Medical College," Cincinnati Lancet-Clinic XXXIV: 641-642 (1895).

vision in its contract with U.C. denied the faculty members the right to teach at any other medical school, a stipulation which, although aimed at creating a cohesive and loyal faculty, decreased the faculty's contact with female medical students and made it unlikely that women would be admitted very soon at the Medical College of Ohio.[19]

Never allowing itself to become embroiled in a protracted debate over the merits of admitting women, the Ohio faculty instead focused its attention exclusively on improving the quality of medical education at the college. In 1895, for example, the faculty introduced an expanded curriculum which allowed not only more time for clinical work but added hours for laboratory experience and and less for lectures and recitations, once the sum and substance of medical education. Earlier viewed as "ornamental," science, the school's catalogue declared, was considered "vital" to the education of the modern physician, something which he would use each and everyday of his career.[20] The faculty not only emphasized the

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[19] Ohio Faculty Minutes, Feb. 14, 1896.

[20] Annual Announcement of the Medical College of Ohio, 1896-1897 (Cincinnati, 1896), pp. 8-9.

importance of science but also changed the way in which it was taught. Disenchanted with the old method of demonstration, the faculty was now convinced that students would learn more effectively and efficiently if they performed experiments themselves. Henceforth the student himself assumed the position formerly held by the professor at the center of educational methodology.

In the interest of the experiential method of teaching, medical students at Ohio began cutting and preparing their own tissue slides in the histology laboratory. Although these procedures were painstaking and required a steady hand, they were essential, for an improperly prepared slide could easily lead to the wrong diagnosis.[21] Instructors also taught students to prepare cultures, to adjust and use a microscope and to recognize at a glance those bacteria, such as the tubercle bacillus and the pneumococcus, whose pathogenicity had already been clearly demonstrated.[22]

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[21] Ibid., pp. 11-12.

[22] Annual Announcement of the Medical College of Ohio, 1897-1898, pp. 11-12.

Besides its experiential nature, the new curriculum placed more emphasis both on the study of disease and on functions of the normal body as well. In anatomy, physiology, and histology, for example, students studied the structure and function of normal organs and tissues in order to comprehend more fully the changes produced by disease. Only after passing examinations in all of these three sciences were students admitted to the study of pathology. Disease was no longer viewed as a set of signs and symptoms, but as an observable process with a beginning and an end. And, professors no longer simply stressed the successful treatment of symptoms but rather the understanding of the pathological process in the hope of learning the cause and perhaps preventing disease.[23]

If students were to comprehend disease and its impact on the human body it was necessary for them to receive a wide range of clinical instruction, a fact which the Ohio medical faculty clearly recognized. Proclaiming clinical instruction to be ther very "essence" of medical

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[23] Announcement of the Medical College of Ohio, 1896-1897, pp. 12-13.

education, the faculty attempted to offer the same broad experience in the clinics and hospitals as in the laboratories.[24] In medical school clinics devoted to every specialty, students began to take an active role, under the watchful eye of the professor, examining and treating patients. Faculty members supervised students in the use of the stethoscope and thermometer and as they performed a variety of chemical, physiological and bacteriological tests.[25]

Although the Ohio medical faculty had every reason to be happy with its science laboratories, clinical facilities were another matter altogether. Before its merger with the university, when the medical college was still located downtown, its clinics attracted some 12,000 patients each year.[26] Uptown, however, the situa-

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[24] Announcement of the Medical College of Ohio, 1897-1898, p. 13.

[25] Announcement of the Medical College of Ohio, 1896-1897, pp. 14-17.

[26] Announcement of the Medical College of Ohio, 1897-1898, p. 13.

tion changed dramatically, and the faculty worried about the adverse effects of the shortage of clinical cases on the curriculum. For example, Charles L. Bonifield, professor of clinical gynecology, reported that, at the beginning of the college's first year in Clifton no patients had come to his clinic. He later added that the situation improved only slightly as the year progressed.[27]

By 1899, after three years in Clifton, the faculty was clearly worried about its clinical facilities, acknowledging that, at least in this one regard, the new location was just plain "unfortunate."[28] At the time, Good Samaritan Hospital, which the faculty controlled, was still downtown at Sixth and Locke Sts. And it was time consuming for students to travel downtown to attend clinics and make rounds with their porfessors. In addition, few patients whom the students had seen earlier

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[27] Ohio Faculty Minutes, April 23, 1897.

[28] Ibid., May 9, 1899.

in the college's clinics were admitted to the hospital, making it difficulty for them to follow a case from beginning to end. To remedy the situation, the faculty began to discuss the possibility of building a small hospital adjacent to the medical college. Finding that the idea was economically unfeasible, the faculty began to look for other ways to provide clinical training.[29]

Initially they found a solution by creating yet more laboratories, such as the one devoted to surgical produres. There, students learned to bandage wounds, administer local and general anesthesia, set fractures, insert stomach tubes and urinary catheters, and perform major and minor surgery-all on cadavers.[30] There was also a clinical laboratory where medical students performed blood counts, including a differential analysis, and learned to recognize the characteristics of such diseases as anaemia, chlorosis, pernicious anemia and various bacterial and parasitic infections. In addi-

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29 Ibid. See also Annual Announcement of the Medical College of Ohio, 1901-1902 (Cincinnati, 1901), p. 14.

30 Ohio Faculty Minutes, May 9, 1899 and Oct. 17, 1899. Also, Announcement of the Medical College of Ohio, 1901-1902, p. 14.

tion, students diagnosed typhoid fever, diphtheria and other bacterial diseases by means of the microscope.[31] Realizing that students also needed actual contact with patients, the faculty established preceptorships so that students could accompany their professors on their daily rounds in private practice.[32]

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31 Ohio Faculty Minutes, Feb. 7, 1898.

32 Ibid.

II

Despite its concern over poor clinical facilities, the Ohio faculty never regretted its decision to merge with the university. The relationship between the two institutions proved excellent. True to its word, the university's board of trustees permitted the medical faculty to conduct its own affairs in total freedom. Even as the faculty changed the curriculum, considered building a hospital and added new laboratories, the board was neither consulted nor attempted to interfere. This also held true in the late nineties as the faculty began to improve the standards for admission to the medical college. Long an issue among medical educators in general, the question of setting rigid admission requirements aroused fears that students would simply go to less demanding schools. Although the Medical College of Ohio began administering entrance examinations in 1884, the faculty continued to admit students who failed one or more examinations, expecting them to make up their deficiencies somewhere along the way. However, by the mid-nineties the folly of such action was obvious to all concerned. Students whose knowledge of basic mathematics and science was poor could hardly be expected

to grasp the principles of chemistry and the other medical sciences. Armed with such conviction, the faculty set about the task of determining new standards for admission.

By 1898 students who applied to the Medical College of Ohio were expected to have completed at least one year of arithmetic, elementary physics, United States history, geography and latin, all on the high school leval. The list of required stubjects for study was quite different from the earlier practice of accepting a high school diploma, bachelor's degree or teacher's certificate as proof of adequate preparation. The problem was that all too often candidates with those very credentials proved to have serious deficiencies, particularly in mathmatics and the various sciences. Therefore the faculty, advised by Conner, decided to list in exact detail the courses needed for admission. Although the requirements were minimal compared with those at Johns Hopkins where a bachelor's degree in science was required for admission, it was nevertheless clear that the Ohio medical faculty had no intention of allowing any loopholes in its rules. Applicants could be conditioned only in Latin because

of the fact that many high schools, especially in rural areas and small towns, did not offer the language. Once conditioned, a student had only one year in which to make up the work and pass a written examination.[33]

In addition to compiling a list of required subjects, the faculty, once again under Conner's leadership and according to guidelines of the Association of American Medical Colleges, also devised entrance examinations and took steps to ensure that these examinations were fairly and properly administered. E.W. Coy, a teacher at Hughes High School, was hired to give and grade the examinations. The admission process was now complete, and the poorly prepared candidate who earlier could have appealed to an individual professor to plead his case before the faculty was now without recourse.[34]

In 1898, the first year for the new admission procedures, twenty applicants were conditioned in Latin and one, who failed the entrance examination was "absolutely" refused admission. Of those who were accepted on condition, one failed the Latin examination at the end of his first

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[34] Ohio Faculty Minutes, May 20, 1898, Oct., 17, 1898, and May 9, 1899.

year and was immediately dismissed from the college. As for the students who met the requirements, the faculty declared that never had the Medical College of Ohio admitted such a well qualified class of students.[35]

Despite its satisfaction with admission standards, the medical faculty had good reason for condern about other matters. In 1899, the board of trustees of the University of Cincinnati, which had previously allowed the medical faculty total freedom to direct its own affairs, moved to end the medical department's cherished independence. That year, the board decided to write new by-laws for the university, laws which would grant unprecedented powers to the president.

Since the resignation of President Jacob Cox in 1889, the University of Cincinnati had been without a president. The board met once each month to set policies, disburse funds and check on student attendance. Without or without a president, it seemed, the university ran quite smoothly. Cox, had in fact, not actually administered the affairs of the institution but was rather the "official medium

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[35] Ibid., May 9, 1898.

of communication" between the board and the academic faculty, of which he was dean, a title he himself preferred to that of president. Cox attended the board of trustees meetings only by invitation and then to submit a report on student attendance. Cox was, quite simply, first among his peers on the faculty and handmaiden to the board of trustees. Although his resignation in 1889 was deemed regrettable, for he was well liked, the position of the presidency was a dispensable one.[36]

After a full decade of running the university in this manner, the board of trustees decided that U.C. not only needed a president but one armed with sufficient power to direct the functions of its three departments, academic, medicine and law. After extensive discussion and deliberation, the board submitted nine amendments to the university's constitution to the three faculties for their approval. Both Conner and Wm. H. Taft, dean of the college of law, immediately sensed that the end of autonomy was at hand. More than the official medium of exchange between the faculties and the board, the new president, by virtue of the powers vested in him, became the actual

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[36] "Statutes, Ordinances and By-laws for the regulation of the Trustees of the University of Cincinnati," pp. 17-18, Board of Trustees Minutes, June 15, 1885.

head of the university, coordinating and directing the efforts and functions of its disparate parts. To achieve this, the president not only became a member of each faculty but obtained the right to preside at all faculty meetings, clearly bringing the univeristy's hand to bear on what had formerly been private affairs. In order to demonstrate the university's authority and each professor's obligations to it, the president alone had the right to nominate and dismiss faculty members as well as deans. Moreover, in his position of ultimate authority the president also sat on the board of trustees and took part in the deliberations of each of its sub-committees.[37]

Alarmed by the board's actions, the medical faculty met to discuss at length the effort to fill the heretofore vacant office of the president with an individual capable of carrying out such unprecedented powers and duties. Faculty members strenuously objected to the fact that the president would join them and have the right to appoint their members. The faculty also found fault with the clause whereby the president became responsible for maintaining

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37 Board of Trustees Minutes, May 15, 1899.

all university buildings, an abrogation of the original contract between the board of trustees and the medical faculty and a further indication of the president's authority over the entire university. Despite its objections, there was, at least for the moment, little the medical faculty could do. They knew full well that the board, including C.A.L. Reed, who four years earlier aided the medical faculty in its negotiaions with the board, as well as Thaddeus Reamy, a member of the medical department, had voted unanimously for the by-laws.[38] Clearly, the trustees indicated, the time had come for a strong executive to coordinate and unite the deparments of the university. Despite its fears and misgivings, the medical faculty directed its secretary, James Hyndman, to send a brief not of dissent. In addition and more telling, Hyndman was instructed to "place the name of the president at the head of the list of faculty" in the next announcement of courses.[39]

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38 Ohio Faculty Minutes, May 25, 1899.

39 Board of Trustees Minutes, May 15, 1899.

Despite the objections of both the faculties of medicine and of law, the board of trustees, determined to have its way, passed the offending by-laws.[40] In doing so they left it up to the new president to fashion out of the loosely connected departments an efficient university modeled on an organic analogue, with each part faithfully fulfilling its obligations for the good of the whole. Unsuspecting of the hazards of the position, Dr. Howard Ayers, who had earlier organized and chaired the department of biology at the University of Missouri and later served as director of research at the Marine Biological Laboratory at Woods Hole, Mass., accepted the presidency of the university in June 1899. And, like the ancient Greeks who killed the bearer of bad news, the medical faculty set its sights on Ayers, whose arrogance and tactlessness soon made him a likely if unfortunate target.[41]

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[40] Like the medical faculty, Dean Taft reported that the law professors also objected to the right of the president to nominate and dismiss faculty members. See Board of Trustees Minutes, June 12, 1899.

[41] Ibid., minutes.

III

Even as the medical faculty grappled with the specter of growing interference by the university in the person of President Ayers, the State Board of Medical Registration and Examination also moved to take a hand in the medical college's affairs. Although by 1900, admission to the Medical College of Ohio was no longer a simple matter of paying a fee, many other medical colleges in the state continued to maintain an open-door policy. That year the state board took steps to impose its will in regulating not only medical college admissions but also medical practice in Ohio. New entrance requirements demanded that candidates had to be certified by the state in order to gain admission to any medical college in Ohio, whether regular or sectarian. Although a college graduate could obtain a certificate merely by presenting proof of his degree, all others had to pass a series of examinations given by appointees of the state board in English, geography, rhetoric, latin, arithmetic, algebra, physics, botany and American history. Regarding medical practice, the state board instituted yet another

examination required for licensure in Ohio. To qualify to take the test, candidates had to hold a diploma from a four year medical school which demanded certain standards of preliminary education for admission. Because of the strong opposition of some 1,300 medical students in Ohio, who petitioned and demonstrated against the regulation, the state board later added a clause exempting graduates of the state's medical colleges from the licensure examination until 1904.[42]

Nathan P. Dandridge, dean of the Miami Medical College, viewed the new legislation as progressive, the result, he noted, of "persistent and strenuous effort for many years" by medical educators and practitioners alike who wanted Ohio to stop taking a back seat in reform to Pennsylvania, whose assembly enacted a strict medical practice act as early as 1884. To those who thought the state was interfering in matters best left to the medical colleges themselves, Dandridge insisted that it was both proper and necessary for the state to set and

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42 Nathan P. Dandridge, M.D., "The New Medical Law, Etc.," Cincinnati Lancet-Clinic 83: 430-433 (May 12, 1900).

and enforce standards of medical education and practice. Although medical colleges differed in many ways, particularly regarding the curriculum and their facilities, he maintained that they nevertheless were exactly alike in both their "obligations and relations...to the state and the community..." Since these colleges awarded the degree of doctor of medicine to their graduates thereby proclaiming to all that these individuals were qualified "to treat the diseases of their fellow citizens," he argued that the state, representing society, had a right and even a duty to protect its citizens from quackery and dishonesty and to guarantee, insofar as it was possible, that the state's medical profession functioned for the good of all.[43]

But everyone agreed with Dandridge that the state ought to determine the finess of those seeking admission to medical college. Speaking at commencement exercises at the Medical College of Ohio in the spring of 1900, Joseph Ransohoff openly criticized the state's increasing requirements for prelinimary education. He pointed out that sixty-six percent of Ohio's graduating class entered

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[43] Ibid.

with only a high school diploma or teacher's certificate and that nine percent had nothing more than a "common school" education. Yet these very men, he insisted, who by current state standards were considered poorly prepared for their medical studies, proved themselves fully capable of becoming fine doctors. And yet, Ransohoff complained, not only the state but the Association of American Medical Colleges as well wanted to increase entrance requirements even, in fact, to demanding a bachelor's degree. Was a degree really necessary to study medicine, Ransohoff asked? No, he answered, not unless medicine was viewed as exclusively scientific, a popular view but a false assumption. Medicine, Ransohoff argued, was not a "pure" science but rather an "applied art," whose goal was to cure the sick and heal the wounded. Science was important to the medical student and practitioner alike but only because it served as a foundation guiding observations and providing solid principles upon which to base successful treatment. "Science," Ransohoff noted, "is long and life is short. The medical student with the majority of mankind must take his views of many facts of science second-hand, on authority."

Medical colleges, he reminded the audience, existed to turn out competent practitioners and not scientists, a fact that the state board in its continued emphasis on preliminary education in science had apparently forgotten.[44]

Like Ransohoff, the rest of the Ohio medical faculty worried about the state's growing tendency to expand its admission requirements and attributed the school's smaller classes to the state's interference. In 1901, for example, 105 certificates of admission were issued in Cincinnati.[45] The Medical College of Ohio, however,

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[44] Joseph Ransohoff, M.D., "Our Students and OUr Teaching," Lancet-Clinic 83: 479-487 (May 26, 1900). Ransohoff's use of the possessive in his title is as revealing about his feelings as his remarks.

[45] Faculty Minutes of the Cincinnati College of Medicine and Surgery, May 16, 1901. Tests were also administered in Cleveland and Columbus. The C.C.M.S. attracted only thirteen applicants that year, a factor which was in part responsible for the school's closing in 1902. In addition, the school was suffering financially and the faculty worried about its continued inability to provide the variety of laboratory and clinical experiences necessary for modern medical education. For more on the school's problems, see W.E. Lewis, "Summation of Report, 1899-1900," C.C.M.S. faculty minutes, May 16, 1900. See also "Patrons and Proteges..."

attracted only thirty-one applicants, considerably fewer than previous years, when first-year classes generally numbered forty-five or more.[46] In 1902, to the faculty's consternation, the state board imposed yet more requirements on Ohio's medical schools. Now, for certification, applicants had to have studied Latin for two years in addition to chemistry, physics, advanced algebra, and plane geometry before taking the entrance examinations for medical school. Moreover, the state demanded that medical colleges themselves present proof of adequate clinical and hospital facilities, an active and competent faculty and four graded courses of twenty-six weeks each. For their part, students were required to attend eighty percent of their classes and achieve

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46 Announcement of the Medical College of Ohio, 1901-1902, pp. 30-31. That year sixty-two graduated. And there were forty-six juniors and sixty-one sophomores.

at least seventy-five percent on final examinations in order to graduate.[47]

Viewing the state's increased stringency with distaste, the Lancet-Clinic insisted that because of the state board's unreasonable rules, perspective students were frightened away from Ohio's medical schools.[48] The faculty of the Medical College of Ohio wholeheartedly agreed with the editorial's complaint. To prove the case, Secretary Hyndman reported in May 1903 that the medical department had, over the course of several years, lost applicants and income. Charging that the state board was rewponsible for the college's misfortune, Hyndman, speaking no doubt for a majority of his colleagues, characterized the board as "meddlesome."[49]

Speaking as he did, using the word, meddlesome, Hyndman nicely summed up the tendency of the state and the university to become increasingly involved in the regulation of medical education. However, as Nathan

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47 "Medical Education Requirements in the State of Ohio," Lancet Clinic XLIX: 419-420 (Oct. 18, 1902).

48 Ibid.

49 Ohio Faculty Minutes, May 8, 1903.

Dandridge astutely pointed out, a physician had a specific relationship to the community in which he worked to cure the sick and prevent the spread of disease. Certainly these functions were traditional although the emphasis on prevention, based as it was on the certitudes of science, was surely growing. What was new was the doctor's relationship to society at large. The physician was no longer viewed as an individual treating other individuals but rather as a member of a larger profession which had a responsibility to protect and advance the health and well-being of the whole of society. In this context it not only made good sense but it was mandatory that the state take action to protect its citizens from quackery and to make certain that the doctors who practiced within its jurisdiction were properly educated.

Such a view was not confined to doctors, but extended over the whole of society defining the responsibilities of lawyers, teachers and others whose work affected their fellow men. Prompted by this idea the board of trustees of the university took steps to place a president with specific powers and duties at the head of the university. No longer a group of loosely affiliated departments, the university now appeared as a single institution

acting to prepare men and women to take their place in the community in a variety of roles. As such, the university needed a strong president who would direct its efforts and represent the sum total of its activities in society.

The idea of a dynamic university directed by one person in whom total authority rested was new and not easily accepted by members of the medical faculty, who were convinced that they knew better than any president what was good for the medical department. They had in the past proven their good intentions as they reformed the medical curriculum and made every effort to provide the most modern of facilities for their students. They had acted, without exception, for the good of medical education. Now, they prepared to fight the new president and any others who disputed their judgment. It would take some time before the members of the medical faculty accepted their new position as part and parcel of the university and the larger society whose interests it represented.

Chapter III
"To Govern the Medical Department": The University and the Medical Faculty, 1904-1909

From the very beginning, Howard Ayers' tenure as president of the University of Cincinnati was plagued with controversy.[1] In perhaps the most striking and one of his earliest displays of power, Ayers ruthlessly reorganized the academic faculty with very little regard for those involved. Actually, however, the board of trustees had hired Ayers because he appeared to be the very type of individual capable of taking the drastic actions necessary to reverse what the trustees described as the "hopeless state of demoralization" crippling the academic department. A brusque man, often described by colleagues as tactless, Ayers wielded the ax quickly and publicly, naming faculty members for dismissal at the year's end, only six months after his own arrival.[2]

Undaunted by the cries of a growing chorus of critics,

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1 For further details of Ayers' administration, particularly his accomplishments, see Reginald C. McGrane, The University of Cincinnati: A Success Story in Urban Higher Education (New York: Harper and Row, 1963), pp. 169-192.

2 Board of Trustees Minutes, Jan. 19, 1900.

Ayers set out to replace those he fired with scholars from prestigious universities including Harvard, Stanford, Yale, the University of Chicago, and even the University of Leipzig.[3] There was no question, he told the university's trustees, that the addition of faculty members with such impeccable credentials woule boost Cincinnati's reputation. At once it became alarmingly clear to the medical faculty and others, who watched incredulously as Ayers handpicked the academic faculty, that the new president intended to make over the University of Cincinnati and bring in outsiders to brighten up what he considered its lackluster appearance.[4]

Following his success in pirating faculty from some of the nation's best universities and colleges, Ayers turned his attention to the creation of a post-graduate school in the department of medicine. Without a doubt the medical faculty sought and desired such a school,

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[3] Board of Trustees Minutes, Feb. 15, 1900. For example, on Feb. 15, Andrew Hickenlooper, heading the Citizens' Committee, asked the trustees to reconsider the vote deposing the faculty. C.A.L. Reed referred the request to a committee, a move which effectively squelched Hickenlooper's request.

[4] Ibid., Sept. 17, 1900, May 28, 1901.

for the scientific armamentarium of the physician had increased remarkably over the space of only two decades. Like Harvard University Medical School, the Medical College of Ohio hoped to provide a short post-graduate curriculum whereby practitioners in the area could update their knowledge and skills, particularly with regard to diagnostic techniques.[5]

Correctly estimating the medical faculty's support for the venture, President Ayers decided that the medical faculty could have its school, but only after relinquishing its precious independence and submitting to his authority. At a meeting on Feb. 3, 1900, Ayers informed the medical faculty that, at the request of the board of trustees, he would appoint a committee of faculty to consult with the trustees on the matter of establishing a post-graduate school of medicine. At once Professor Reamy, a member of the board, corrected the president, insisting that Dean Conner and not Ayers was supposed to name the committee's members. That being the case, Reamy moved that Conner select four other pro-

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[5] "Post-Graduate Study," JAMA 36: 1048 (April 13, 1901). See also "Contents and Digest," JAMA 39: 51 for advertisement for Harvard's Post-Graduate School of Medicine.

fessors plus himself and the faculty's secretary for the committee. Ayers, chairing the faculty meeting as was his right, immediately ruled Reamy out of order. A heated discussion followed and once again Reamy repeated his motion, only to have it nullified by Ayers. Finally, Reamy gave up. The president, refusing to accept any nominations to the committee, appointed its members, excluding of course the dean. When questioned by the faculty about the organization of the proposed school, Ayers implied that it was none of the faculty's business and that he would let them know the details after he worked them out with the board of trustees.[6]

Infuriated by Ayer's obstinate display of authority, the medical faculty took action through Reamy and C.A.L. Reed to stop the propose project from going any further. Shortly after Ayer's meeting with the faculty, Reed reported that a committee of the board found it inexpedient to establish a post-graduate school of medicine at that time. On its recommendation, plans were indefinitely postponed. Stalemated, the medical faculty waited for its next encounter with the dictatorial Ayers.[7]

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[6] Ohio Faculty Minutes, Feb. 3, 1902. See also McGrane, p. 183.

[7] Board of Trustees Minutes, Feb. 17, 1902.

Meanwhile, Ayers continued to flaunt his position and to remind the faculty on every occasion of his authority. He chose the occasion of the medical department's commencement in May 1902 to show off a new academic attire which he had recently purchased in Europe. Against a background of the medical faculty conventionally attired in black, Ayers appeared "resplendent," according to a local newspaper, in an Oxford cap and a gown of black, gilt and "royal purple." Lined with purple, the gown also featured a purple vest and wide velvet stripes on the sleeves denoting the bachelors', law and doctorate degrees, all conferred on the president. Ayers' cap of purple velvet, described by the reporter as a real "peach," had a gilt tassel "nearly as large as a man's hand."[8]

However flashy and token in its symbolism, Ayers' message was by no means lost on the medical faculty. A month later the parties skirmished again, this time over the hotly contested right to fill vacancies on the medical faculty. Following one particularly hostile meeting, Ayers paused as he was leaving the medical

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[8] "Resplendent Robes Worn by President Howard Ayers," Commercial Tribune, no date, contained in Ohio Faculty Minutes, May 7, 1902. McGrane claims that the very inclusion of the clipping in official minutes indicates the faculty's anger. However, it was the secretary's practice to include programs and accounts of commencement in the minute book. See McGrane, pp. 184-185.

college, turned and shook his fist menacingly at Reamy and other faculty members, declaring that, "I propose to govern the Medical Department of the University if I have to go to hell to do it and you gentlemen may as well understand it now as later." Incensed by Ayer's behavior, Reamy reported the incident to Frank Jones, a fellow member of the board of trustees. Dissatisfied because Jones merely confronted Ayers and declined to reprimand him officially, Reamy brought charges against the president at a full meeting of the board, declaring publicly that Ayers had used "language grossly profane and unbecoming a gentleman." Moreover, Reamy added, the president had "willfully, knowlingly, and specifically and for a purpose misrepresented the substance and letter" of the trustees' earlier directions to him regarding the appointment of a committee to create a post-graduate school of medicine. However, if Reamy expected a full scale investigation into the latter charge, he was disappointed. Instead, board member Oscar Kuhn rudely reprimanded Reamy for his public criticism of Ayers. Later that fall, the president was permitted to respond to Reamy's charges in a closed session of the board, charges which the board

found both "inconsequential and immaterial."[9]

Creamy was furious at his failure to damage the president's reputation with the board of trustees. If anything, he had forced the board's members to line up in support of Ayers, giving him a public vote of confidence. However, the situation changed in the spring of 1903 when the board of trustees was reorganized and reduced in size under the provesions of a new municipal code. In place of the former eighteen members, a large and unwieldy group at best, the board was now made up of nine men, all of whom were appointed by Mayor Julius Fleischmann. Besides Joseph Ransohoff from the medical faculty, the mayor appointed Alfred Benedict, Rev. Henry Curtis, John G. O'Connell and Ellis Kinkead, all members of the community and all of whom were less than satisfied with Ayers' performance in office. On the opposite side were Oscar Kuhn, Samuel Trost and Frank Brown, all of whom favored the president. For the time being at least they were joined in their endorsement by Frank Jones, who was elected chairman of the new board of trustees.[10]

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[9] McGrane, pp. 185-186.

[10] Ibid., pp. 186-187. Also, Board of Trustees Minutes, May 11, 1903.

The medical faculty was delighted with the turn of events. Hyndman noted in faculty minutes that, with the departure of Reamy and Reed, the board of trustees had indeed lost two "able medical men," men whose support the medical faculty expected but nevertheless appreciated. But, Hyndman continued, "we may congratulate ourselves that the new Board contains one of our number, one who will honor the position in a general sense and who, in addition, through the familiarity with medical teaching, will be more efficient than a nonmedical man in those affairs which especially concern us and who will intelligently and loyally explain to his fellow members the high aims and desires of the medical faculty as he learns them through his association with us." Happily for the faculty, its confidence in Joseph Ransohoff's ability to oppose Ayers was not misplaced.[11]

The fact that a strong faction which opposed Ayers existed on the board of trustees and that it needed only a single vote to enforce its will quickly became apparent. Dissidents complained, for example, that Ayers had been curt with a perspective benefactor, causing the university to lose out on an endowment. Continuing their barrage of criticism, board members seized on every possible inci-

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[11] Ohio Faculty Minutes, May 8, 1903.

dent to discredit Ayers. When the National Education Association met in Cincinnati in the spring of 1903, they pointed out that Ayers was not even invited to address the group but rather received only an invitation to a public reception, making it clear that he was not a nationally respected educator. Dissatisfaction with the president among the board's members was such that by mid-summer Chairman Jones, although reluctantly, joined the opposition, explaining to a newspaper reporter that, "we can never have a big university until we have harmony. You can guess for yourself," he added cryptically, "how we will get it." Immediately Cincinnati's newspapers began to entertain the possibility that Ayers' dismissal was imminent. On July 1, the Commercial-Tribune reported that Ayers' opponents had "counted noses" and, finding themselves in the majority, promptly dispatched Oscar Kuhn to inform Ayers that his situation was impossible and to advise him to resign. Should Ayers fail to do so, the newspaper continued, he would be "forced out" of office.[12]

Undaunted, Ayers ignored the board's threats and continued in office. Not knowing quite what to do next,

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[12] "President Ayers Leaves (sic) University: Majority of Directors Are Opposed to Him Continuing at Head of the Institution," Commercial-Tribune, July 1, 1903, p. 10.

the board of trustees met to discuss its options.[13] Curtis suggested that Ayers be allowed to continue in office for one more year, his contract expiring on July 4, 1904. Ransohoff quickly added that a search committee for his successor should be formed immediately. Kuhn, however, pleaded with his colleagues on behalf of the beleaguered president to delay any and all action against Ayers. Friction between the president and the faculty, he explained, was widely known as well as the trustees' lack of support for the president. If the board fired Ayers, Kuhn argued, the university would have trouble finding a competent successor since perspective candidates would be sure to know of the precarious tenure of the presidency at U.C.[14]

Abandoning the opposition, Chairman Jones attempted

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13 "Doctor Ayers Will Get Walking Papers: Failed to Hand in Resignation and University Directors Will Request It," Commercial-Tribune, July 20, 1903, p. 10.

14 "Courtesy Saved President Ayers: Test Vote Showed His Friends in the Minority in University Board," Commercial-Tribune, July 21, 1903, p. 10.

to muster support for Ayers by presenting letters complimentary to the president published by a group of prominent citizens. To a man, the writers insisted that the university was in better condition than when Ayers first arrived. First and foremost, he had created an academic faculty many of whose members were known and respected nation wide. Furthermore, because of the reorganization, several writers claimed, morale was up and the students were more zealous in their studies than ever before. C.A.L. Reed, who frequently supported Ayers in matters not pertaining to the medical department, noted that the president had indeed helped to attract many large gifts and donations, most notably an endowment from David Sinton for the academic department and a generous gift from William Cooper Proctor for an addition to the library. Moreover, under Ayers' leadership, the university's enrollment had increased from 405 students in 1900 to 653 only two years later. In conclusion, Reed pleaded with the trustees to overlook Ayers' arbitrary ways and consider his many accomplishments as president.[15]

The pleas of Reed, Jones and the others on behalf of Ayers worked, at least for the time being. Curtis,

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[15] Ibid. See also "Concerning the Presidency of the University of Cincinnati," a pamphlet of six letters addressed to Frank Jones.

a harsh critic, nevertheless declared that he had no desire to hurt the university and was therefore willing to delay action against Ayers. Ransohoff and O'Connell backed down as well and the resolution to dismiss Ayers, who sat through the entire proceedings reportedly "Unmoved," was put off until November, giving Jones and his supporters four months to shore up their defenses.[16]

Unfortunately for Ayers, Jones left for Europe in late July and his return to Cincinnati was delayed by an accident his wife suffered while abroad. Without Jones as a moderating force, the board met on Nov. 15, quickly taking up the business concerning Ayers' dismissal. Led by O'Connell, elected chairman pro tem, a majority composed of Benedict, Kinkaid, Ransohoff and Curtis, passed over Kuhn's suggestion that any action be postponed until Jones' return, and went into executive session in order to consider the "special order of business," firing Ayers. In the end, the vote followed now familiar lines with Kuhn, Trost and Brown as the president's only

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[16] "Courtesy saved President Ayers..."

supporters. Ayers' opponents carried the day and Curtis instructed the board's clerk to inform Ayers of the action taken against him.[17]

Tenaciously, Ayers remained until the board of trustees at last relieved him of his duties the following April. Meanwhile, a presidential search committee was formed which included Curtis and Benedict as well as Frederick C. Hicks, Wm. Rogers and P.S. Conner, deans of the academic, law and medical departments respectively. Having lost their fight on behalf of Ayers, his former supporters on the board now rallied to the cause of harmony and declared that they would abide by the committee's choice of Ayers' successor. The board's members clearly understood that their unanimous support was critical if the university were to attract competent candidates for the

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17 Board of Trustees Minutes, Nov. 16, 1903. Also, "Ayers Deposed by Vote of Trustees: University President Treats Action with Unusual Difference," Commercial-Tribune, Nov. 17, 1903, p. 1. The newspaper, which disliked the president, printed yet another story about him that same day. Ayers was being sued for breach of contract by the Southern History Society for failing to honor a contract to supply biographical data to the publisher of a volume featuring men who contributed to the success of Missouri. See "Suit Failed Against Dr. Howard Ayers," p. 2. Also, McGrane, pp. 189-190.

position of president, a position which was not only new but apparently a very risky one at the University of Cincinnati.

Others in the community also called fro harmony among the university's officials. For example, The Citizens Bulletin, a small newspaper which waged a relentless campaign for good government and against the Republican machine of George B. Cox, urged the trustees to bring an end to the "promiscuous" criticism attendent to Ayers' presidency by finding a candidate acceptable to all parties. It was in the very best interest of all concerned, the paper argued, to make the University of Cincinnati, "one of America's foremost institutions of learning."[18]

Following events closely, the Bulletin praised the efforts of Frank Jones, "one of our most prominent citizens and a warm friend of the University," to find a well-qualified administrator to succeed Ayers. Shortly after his return to the United States in Dec. 1903, Jones conferred with Arthur Hadley, president of Yale University, regarding possible candidates for the position.

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[18] "Our University," The Citizens' Bulletin, Nov. 28, 1903, p. 2.

Hadley suggested Charles William Dabney, president of the University of Tennessee.[19] A Southener by birth and education, Dabney was born in Virginia before the Civil War and later educated at Hampden-Sydney College and the University of Virginia before going to study at the University of Goettingen, where he earned a Ph.D. Much of his career was devoted to bringing the South up to the standard of living enjoyed by the rest of America. Dabney served as director of the Agricultural Experiment Station in North Carolina from 1880-1887. Then, during Cleveland's second administration, he was Assistant Secretary of Agriculture. Dabney was also a charter member of the Southern Education Board, founded in 1901 for the purpose of improving education in the South. During his seventeen year tenure at the University of Tennessee, DAbney built the institution from a small teachers' college into a full university with a well-known school of agriculture. A natural diplomat, at home with politicians and academicians alike, a skilled administrator

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19 "University Affairs," The Citizens' Bulletin, Dec. 12, 1903.

and nationally respected educator, Dabney seemed to be just the man the University of Cincinnati was looking for.[20]

Encouraged by Dabney's initial interest in the presidency, the board of trustees sent Curtis and Ransohoff to Knoxville to meet with him. Why Ransohoff went, and not Conner, who was a member of the search committee, is unknown. One thing, however is certain. Ransohoff's judgment of Dabney's ability to deal fairly was a critical factor in the outcome of the negotiations. Both he and Curtis were highly impressed with Dabney and returned to Cincinnati enthusiastic and anxious to lure him away from Tennessee. Toward the end of November, Dabney, who was returning home from a trip to New York City, visited Cincinnati and met with the university's trustees.[21]

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[20] Gene D. Lewis and Zane L. Miller, "Charles W. Dabney and the Urban University: An Institution in Search of A Mission," Cincinnati Historical Society Bulletin 38: 151-171 (Summer, 1980).

[21] "University Affairs."

The meeting went well and a month later Dabney returned, this time to talk with city officials regarding the municipal university and its future.[22]

An astute man, Dabney also requested a meeting with the politician, Boss Cox, the only man, Dabney knew, who could answer certain questions. In an interview in Cox's downtown office, Dabney asked the Republican boss whether his party would attempt to decrease the university's tax

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22 "Significance of Dr. Dabney's Call on George B. Cox," The Citizens' Bulletin, Jan. 2, 1904, p. 2. See also "The Dabney-Cox Interview: What Others Think of It," The Citizens' Bulletin, Jan. 16, 1904, p. 1. The latter was a reprint from the Boston Herald critical of the fact that Dabney, a university president, would meet with an "ex-saloon keeper" because he was the "only man who could speak with authority on the matters" which concerned Dabney. Cox held no office, and had no connection with the university yet, even outsiders knew of and acknowledged his power. The Citizens' Bulletin found the incident "alarming" and criticized the Cincinnati Enquirer for printing the story which then found its way to other newspapers, to the discredit of Cincinnati. For an engaging account of Cox and his politics, see Zane L. Miller, Boss Cox's Cincinnati: Urban Politics in the Progressive Era (New York: Oxford University Press, 1968). Miller shows, as Cox himself once remarked, that a boss was "not necessarily a public enemy" and in fact helped bring much needed order to the city.

base. Cox replied that there was little danger of that happening. Could, Dabney followed, taxes be increased for the institution. Cox thought that additional legislation would be necessary but did not rule out the possibility. On further questioning by Dabney, Cox assured him that neither he nor his party had any interest in interfering with the university's affairs. Thus persuaded of the politician's good will, Dabney, whom Cox described as "eminently fitted for the position," accepted the office of president of the University of Cincinnati.[23]

From the beginning, Dabney got along famously with the members of the university's medical faculty. Arriving in Cincinnati in July 1904 to begin his five year contract, Dabney began at once to attend medical faculty meetings. Fortunately the constant strife between Ayers and the faculty

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[23] Ibid., "Significance..." See also "Dr. Charles W. Dabney Wires Acceptance," Commercial-Tribune, Jan. 6, 1904, p. 2. Also Board of Trustees Minutes, Jan. 12, 1904 for Dabney's formal election. His five year contract called for an annual salary of $8,000 and a house to be constructed for him on university gounds. As Dabney and his wife preferred apartment living, this was never done. On Jan. 18, Jones, who had been instrumental in Dabney's coming to U.C., was re-elected chairman of the board of trustees.

was replaced by an easy give and take atmosphere. For one thing, Ransohoff and Dabney liked and trusted each other, a factor which figured largely in the feelings of the rest of the medical faculty for the president. Dabney worked in close concert with Ransohoff and Rachford who frequently introduced measures to effect the president's plans for the department. For example, when James Hyndman, the faculty's secretary and longtime professor of laryngology and hygiene died in Sept. 1904, Ransohoff, at Dabney's suggestion, nominated Christian R. Holmes, then professor of diseases of the eye, ear, nose and throat at the Miami Medical College, to fill the vacancy. Holmes' acceptance of the appointment was important to the college's future, for he was the driving force behind a campaign to build a new city hospital, a hospital which the Ohio medical faculty hoped to use as its teaching facility.[24]

A Dannish immigrant who never quite lost his distinctive pattern of speech, Holmes first came to Cincinnati as a young man in search of medical treatment for a bothersome eye infection. There, he met Dr. Robert Sattler, who was professor of ophthalmology at Miami Medical College, and who quickly introduced the young Holmes to the intriguing curiosities of microbiology. Soon Holmes was preparing

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[24] Board of Trustees Minutes, Oct. 17, 1904. Also, Ohio Faculty Minutes, Oct. 8, 1904.

specimens and drawing illustrations for Sattler's lectures. He also found employment as secretary and director of Cincinnati's Associated Charities. Increasingly, however, medicine attracted Holmes' interest and he enrolled at Miami Medical College, graduating in 1886. After serving an internship at the Cincinnati Hospital, Holmes entered private practice and began teaching at Miami.

In Oct. 1892, Holmes married Bette Fleischmann, the daughter of Charles Fleischmann, one of his wealthy patients. Holmes' in-laws were not only wealthy but they were politically powerful as well.[25] In 1900, Holmes' brother-in-law, Julius, was elected mayor of the city. Julius shared Holmes' concern over the deteriorating condition of the Cincinnati Hospital. Determined to build an entirely new hospital, the two men served together on a committee

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[25] Zane Miller observes that the Fleischmanns, C.R. Holmes, and Dr. Frederick Forchheimer, who in 1905 became dean of the medical department, among others formed a "Jewish-Christian connection of relative newcomers to society that ranked just below the "Taft Circle." (Boss Cox, p. 52). For a biographical sketch of Julius Fleischmann, see Biographical Dictionary of American Mayors, 1820-1980 (Greenwood Press, forthcoming), s.v. "Fleischmann, Julius, Mayor of Cincinnati," by Judith Spraul-Schmidt.

to draw up plans for a new and modern facility.[26] Late in the winter of 1903, the city purchased a fifteen acre site, chosen by Holmes, which was located on the hilltops a short distance from the university's campus.[27]

Holmes' appointment to the faculty of the Medical Department of the University of Cincinnati and his elevation soo after to the executive faculty went largely unnoticed. Nevertheless, Holmes quickly became the link between the department and the new municipal hospital and the success of Dabney's plans to forge the two into a single teaching unit. The idea that a university

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26 Minutes of the Board of Trustees, Cincinnati General Hospital, Feb. 5, 1902. The old hospital at Twelfth and Plum was called the Cincinnati Hospital, the new one near Burnet Woods, Cincinnati General Hospital. People, including historians, mistakenly call both by the latter name. In Dec. 1902 Mayor Fleischmann appointed a committee to look for land. Holmes was joined by Dean Conner. The two were guided by the idea of finding a site not far from the university.

27 Board of Trustees Minutes, Cincinnati General Hospital, Feb. 27, 1903 and March 16, 1903. The site was bounded by Burnet, Eden and Elland Aves in Avondale.

ought to control not only a medical college but a hospital, save for Johns Hopkins, was almost unheard of at the time.[28]

Still, this was exactly what Dabney had in mind, a fact which became evident when William Henry Welch, dean of the Johns Hpkins Medical School, was invited to speak at Dabney's inauguration on the nature of the relationship between the medical school, university and hospital. Medical education, Welch told the audience, no longer depended on the "meager appliances" of the past when many students received an M.D. without ever having been in a hospital ward. Modern medical schools, he argued forcefully, required both scientific and clinical laboratories where students could learn both the fundamental principles of medical science as well as their clinical application. Morover, Welch explained, as

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[28] The Johns Hopkins Medical School in Baltimore was unique in its close affiliation with its own university hospital. Welch was in fact so convinced of the need for a hospital located closely to the school, that he delayed the medical school's opening until 1893 when the hospital was ready. For a closely detailed narrative history with appendices of important documents, see Alan M. Chesney, M.D., The Johns Hopkins Hospital and the Johns Hopkins University School of Medicine: A Chronicle 3 Vols. (Baltimore: The Johns Hopkins University Press, V. I, 1943; V. II, 1958; V. III, 1963).

While Harvard made use of the Massachusetts General, Boston City and other hospitals in the area, it had no administrative control over any of them. And, it would be the late teens before Columbia's Physicians and Surgeons would affiliate exclusively with the Presbyterian Hospital.

institutions of higher education both the medical college and the teaching hospital properly belonged in the university. "There is," he warned, "no saving grace in the merely nominal affiliation of a medical school with a university." Rather the union must be a "vital one" in which the medical faculty submitted to the direction of the university in educating physicians.[29]

Dabney was very concerned about the university's philosophy and the institution's function in society. In his inaugural address, he expounded his concept of the university as a hierarchical organization made up of highly specialized components, each with its individual responsibilities and serving at the head of the city's educational system, supervising and guiding its progress. In Dabney's view, any and all of Cincinnati's schools and colleges had a proper place in the municipal university. This included of course Miami Medical College as well as the city's hospital.[30]

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29 "Address of Doctor William H. Welch," University of Cincinnati Record, Inauguration Number, Dec. Jan. 1904-1905 (Cincinnati, 1905), pp. 48-51

30 Dabney's inauguration drew a large number of national dignitaries. Besides Welch, other speakers included Henry S. Pritchett, president of M.I.T., who spoke on behalf of engineering; Jacob Gould Schurman, president of Cornell, who spoke on behalf of philosophy; and Wm. L. Dudley, M.D., dean of medicine at Vanderbilt, who spoke for the alumni. Two old friends from Dabney's

Earlier President Ayers threatened and angered the medical faculty when he precipitously challenged its traditional perogatives. Dabney's weapon however was not presidential power but instead a compelling and clearly articulated argument concerning a society nurtured and guided by an educated citizenry. Dabney's vision of the university's superior place in the community with service as its raison d'etre dovetailed nicely with the medical profession's commitment to relieving man's ills through science. His arguments made good sense to the medical faculty; it was an idea whose time had come. Still the actual problems involved in merging Miami with the Medical College of Ohio were legion and the president knew that change would take time. In the meantime, he depended on his good relations with the medical faculty to smooth the way toward eventual union.

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days at the Southern Education Board were also there, Robert Curtis Ogden and albert Shaw, both now members of the General Education Board. See also "Address of President Dabney," Inauguration Number, pp. 25-26. Also, for a full elaboration of the organic community, see Zane L. Miller, "Scarcity, Abundance and American History," Journal of Urban History 4: 131-155 (Feb. 1978).

From the time of Dabney's inauguration, the medical faculty gave every indication of its willingness to cooperate with the new president. When Dean Conner retired in May 1905 after some forty years of service, the faculty elected Frederick Forchheimer, professor of medicine, to succeed him. Forchheimer, events proved, was a man whom Dabney could count on to assist him in advancing the cause of medical education at the university. Early in Forchheimer's tenure, plans once again got underway for a post-graduate school of medicine. Unlike Ayers, who seized on the issue to bring the medical faculty to heel, Dabney understood the real need for such a course of study and not only obtained the board of trustees approval but allowed the medical faculty the freedom necessary to guarantee its success.[31]

In the spring of 1905 in an atmosphere marked by congeniality, Dr. Benjamin K. Rachford, professor of pediatrics, suggested to his colleagues that it was time

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31 Report to the Executive Faculty on the Post-Graduate School, Ohio Faculty Minutes, Oct. 4, 1906. For further discussions, see minutes of Dec. 26, 1905 and Jan. 16, 1907.

to change the medical department's contract with the university in order to achieve a closer and more efficient relationship with the president. First, Dabney was given an active role in the department's affairs through a provision which placed him on the executive faculty and gave him a voice equal to its other members. As before, but now with the president of the university as a member, the executive faculty would continue to "elect its own officers, fix the requirements of admission, the course of study, and the conditions of graduation; to formulate and enforce rules governing the internal affairs of the department."[32]

In addition, the new contract stipulated that Dabney could recommend that the board of trustees vacate a chair but only after consulting with the executive faculty, and provided that he take such action only once in any given academic year. To act beyond that, Dabney needed a three quarters majority vote. The new by-law clearly affirmed the faculty's faith in Dabney and, while it

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[32] Ohio Faculty Minutes Nov. 7, 1905 and "Draft of Amendment accepted at Executive Faculty Meeting, Nov. 11, 1906," contained in minutes.

recognized to a limited extent his presidential perogatives, the law also protected the faculty against a wholesale reorganization such as occurred in the academic department at the hands of President Ayers. A provision in the latter by-laws regarding finances was altered so that the medical faculty no longer divided up remaining funds at the end of the year but instead saved the money for future improvements. At Ransohoff's suggestion, the faculty also agreed to help solicit funds towards an endowment, another step to integrate the aims and philosophy of the medical department with the university.[33]

Encouraged by the medical faculty's willingness to create stronger bonds with the university, Dabney, late in 1905, initiated action to bring about the merger of Miami Medical College and the Medical College of Ohio.[34] At his suggestion the university's board of trustees appointed a committee to "consider the present status of Medical Education in this city." Hearing of the board's action, the Miami faculty immediately formed a committee

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33 "Draft of Amendment..."

34 In 1901, Miami and the Cincinnati College of Medicine and Surgery considered merging. However, negotiations were unsuccessful and the C.C.M.S. closed in 1902. The next year Miami absorbed Laura Memorial Woman's Medical College.

composed of Nathan P. Dandridge, John C. Oliver, John Withrow, George Fackler and Joseph Fichberg, which invited the university's committee to confer on "a plan agreeable to both medical colleges for the creation of a single medical school in Cincinnati under the auspices of the University."[35] In addition to the ever increasing costs of medical education and the fact that well-prepared students desired university affiliated medical schools, the Miami faculty clearly recognized Dabney's argument regarding the proper place of the medical college and its function within a well-integrated university.

Shortly after Miami created a committee on merger, Frank Jones chairman of the board of trustees, requested the medical faculty to do the same.[36] Dr. Rachford was appointed chairman of the department's delegation, which included C.A.L. Reed, an active member of the department,

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[35] Letter, N.P. Dandridge to A.V. Phelps, Dec. 4, 1905, in Ohio Faculty Minutes, Dec. 13, 1905.

[36] Letter, Frank Jones to A.V. Phelps, Dec. 21, 1905, in Ohio Faculty Minutes.

as well as Dean Forchheimer, a man on whose support Dabney could generally depend.[37]

Events moved rapidly and by early February, Rachford reported to the executive faculty on a proposal which Miami had made for merger. Stating his outright opposition, Rachford explained that Miami wanted both faculties to transfer their rights and powers without condition to the university's board of trustees. Like Rachford, the faculty opposed starting over again with a clean slate to bargain with the trustees for certain rights and quickly rejected the plan. However, Rachford and the executive faculty did not slam the door on further discussions with Miami. Instead they reaffirmed their confidence that Dabney and the board of trustees would continue to act in the medical department's best interests.[38]

Calling Miami's plan inexpedient, Rachford pointed out that its adoption would have forced the medical

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37 Ohio Faculty Minutes, Dec. 22, 1905/ Also, letter, Phelps to Jones, Dec. 27, 1905 contained in Ohio Faculty Minutes.

38 Minutes of the "Joint Committee to Consider a Plan for the Alliance or Merger," Jan. 4, 1906. Ohio Faculty Minutes.

faculty to postpone improvements it planned to make. For example, two primary chairs in science had only recently been placed on a "professional basis," that is their occupants spent all of their time teaching and demonstrating scientific experiments. Faculty members had additional plans to make the remaining preclinical chairs fulltime but needed the trustees' approval for additional salaries. In fact, Rachford noted, the department hoped ultimately to place the "entire faculty upon a similar basis."[39] Such high ideals were indeed commendable but hardly practicable in 1906 when the medical department still lacked endowments necessary for such an expensive venture. Still, Rachford managed to convey to Dabney and the board the faculty's commitment to the highest ideals in medical education.

Anxious to demonstrate that it had not acted pre-

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[39] Ohio Faculty Minutes, Feb. 1, 1906. When news of a possible merger became public, the Ohio Alumni Association also objected to Miami's plan. It resolved that "under no circumstances" should Ohio's name be changed. See letter, Chas. Maertz, M.D. to faculty, Jan. 17, 1906, in faculty minutes. See also "Reply proposed by Committee," Ohio Faculty to Board of Trustees, Ohio Faculty Minutes, Feb. 1, 1906.

cipitously in rejecting Miami's plan, the executive faculty called a general faculty meeting on Wednesday evening, Feb. 7, so that the entire faculty might discuss the Miami proposal. President Dabney was invited to preside over the meeting and opened it with a brief explanation of what the proposal involved. The plan was then read in full and an open discussion of its merits and disadvantages followed, after which the entire faculty voted unanimously to reject it. However, once again and to Dabney's relief, the idea of merger itself was not rejected. Ransohoff moved instead that a counter proposal be made to Miami which provided that Miami should surrender its charter if it wished to merge with Ohio. After that, Miami's faculty would disband except for those professors who held staff appointments at the Cincinnati Hospital and therefore would be welcomed at Ohio.[40]

Ignoring Ransohoff's suggestions, which would only evoke the ire of Miami's faculty, the board of trustees requested once again, two weeks after the general faculty meeting, that the department name a committee

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[40] Ohio Faculty Minutes, Feb. 7, 1906. Also, "Resolutions Presented by Dr. Freiberg," contained in minutes.

"to formulate some plan under which such merger of medical colleges in this city as is desired may be effected." Pressing for action, the board asked for a meeting with the committee within one week.[41] Faced with the serious nature of the board's request, the medical faculty decided that, rather than appoint a committee, the entire executive faculty would meet with the board of trustees.[42]

Always ready to oblige the medical faculty, a majority of the board's members attended the meeting at which C.A.L. Reed clearly presented the department's objections to Miami's proposal. Carefully Reed outlined the history of the medical department, its formation and the nature of its contract with the university. At

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Zincke, a member of the executive faculty, suggested that medical education in Cincinnati could be consolidated by making the Cincinnati Hospital the clinical department of the University Medical School and every member of its staff, a member of the faculty. Here again is an early suggestion that the city hospital ought to be under the university's control.

41 Ohio Faculty Minutes, Feb. 22, 1906.

42 Ibid., Feb. 22, 1906.

least two board members, Brown and DuBruhl, openly expressed sympathy with the department's reluctance to relinquish the rights and obligations outlined in the contract. In the end, the board once again asked the faculty "to formulate some working plan looking toward cooperation with the Miami College." As a further measure of the board's sympathy, no time limit was placed on the faculty's deliberations but rather the faculty was asked to notify the board when a plan had been developed.[43]

At the end of February, Dean Forchheimer convened another meeting of the executive faculty to consider a final draft of Ohio's plan for merger, before submitting it to the board of trustees. Central to the proposal was the faculty's conviction that, "mergers have always been disappointing in their results and are liable to give rise to discord. There can not," the document stated, "be two managements of one institution." Consequently, the Ohio plan provided for the closing of Miami. The college's property would be sold and proceeds along with

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[43] Ibid., Feb. 24, 1906. Minutes of the joint meeting were entered in the Ohio Faculty Minutes.

other financial assets would be placed in a fund "to be used to perpetuate the name of Miami Medical College," perhaps by creating scholarships or endowing a medical chair. As far as Miami's students were concerned, they would transfer to the university's medical department. An additional clause even allowed that Miami's alumni could join Ohio's alumni association.[44]

Convinced that merger of the two faculties was impossible, the Ohio plan called on Miami's faculty to disband. However, because of Ohio's need to increase its clinical facilities, the plan provided that all Miami professors holding hospital appointments could be nominated to clinical professorships. Thereafter vacancies in the didactic faculty would be filled from the clinical and auxillia ry personnel, with "due regard" for the candidate's qualifications. The proposal made it clear that no vacancies existed at present and that, "it would be unjust to make them."[45]

Although the board of trustees did not go so far as to reject outright the medical faculty's proposal, it

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[44] Ibid., Feb. 27, 1906. A typed draft of the plan is pasted into the minute book.

[45] Ibid., agreement.

certainly did not accept it. Instead the board only admitted the possibility that the Medical College of Ohio might absorb Miami Medical College. In mid-March, Oscar Kuhn, chairman of the board, called the executive faculty into conference. After more than two hours of discussion, the board agreed that a committee of five of the medical faculty ought to meet with a similar committee from the Miami faculty to discuss the subject of merger or "absorption" of the Miami Medical College.[46]

Following the wishes of the university's trustees, the medical faculty selected a committee comprised of Rachford, who was chairman, plus Forchheimer, Ransohoff, Reed and A.V. Phelps, secretary, in short the most powerful and outspoken members of the faculty. Before entering negotiations, the committee was bound by instructions from the executive faculty on several crucial issues: There were no current vacancies on the faculty; the method of election to the executive faculty was not open to change; Miami Medical College could dispose of its assets in any way its saw fit; and finally, under no circum-

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[46] Ohio Faculty Minutes, March 15, 1906/ Plans offered by both colleges were presented for discussion. Typed report contained in Ohio Faculty Minutes.

stances was the department's name to be changed.[47]

Delegations from the rival colleges met on March 24 with Professors Dandridge, Oliver, Eichberg and Fackler representing Miami. First, Ohio's plan for absorption was presented. Next, Miami countered with a proposal for merger, calling first for the department's name to reflect the equal standing of two partners. In the interest of equality, the plan stipulated that all faculty members, both didactic and clinical, would hold the same rank and voting power, a provision which would substantially diminish the authority of the executive faculty to a committee charged with supervising the college's affairs but always subject to a vote of the full faculty and to the by-laws governing the department.[48]

Besides reducing the power of the executive faculty, Miami's plan also diminished the influence of individual professors by calling on incumbents from both schools to share the chairs of medicine, surgery and anatomy.

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47 Ibid., March 20, 1906.

48 Typed report of meeting, contained in Ohio Faculty Minutes.

Ransohoff and Oliver together, according to the scheme, would direct the department of surgery, while Forchheimer and Eichberg headed medicine, and Phelps and Louis shared the work in anatomy. Elsewhere, Holmes' department would be divided into otology, which he would chair, and laryngology, to be headed by a man from Miami. Although none of Ohio's executive faculty was actually displaced, the most influential among them were called upon to share their positions, the very source of their influence. Not surprisingly, the Ohio faculty found Miami's plan for merger as distasteful as Miami found its suggestion for absorption.[49]

In its report to the board of trustees, the medical faculty concluded that: "After a time it became evident to all that the plans of the two institutions were so hopelessly at variance that it would not be possible to agree upon a plan for merger..." All chances of reaching an agreement seemed exhausted. Repeatedly Miami and Ohio offered proposals which were totally at odds.

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[49] Ibid.

Even to the optimistic Dabney there seemed little possibility that a compromise could be worked out.[50]

Significantly, however, the president's frequent pleas with the medical faculty to arrive at an acceptable plan did not result in hostility between Dabney and the medical faculty. In fact the medical department's relationship with the university and its president was marked by cordiality and cooperation. Even as his hopes for union were disappointed, Dabney assisted the medical department as it planned for the first postgraduate school of medicine in Cincinnati. Proud of its expertise in individual specialties, the faculty was anxious to begin classes for practicing physicians. A single cloud darkened the horizon; could the department meet the demand for clinical experience for graduate students and satisfy undergraduates as well? There was almost certain to be a shortage of patients despite the faculty's determination to use clinics at Good Samaritan as well as Jewish Hospital, and ward patients at both

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[50] "Report to the Board of Directors," of joint meeting with Miami, March 24, 1905, contained in Ohio Faculty Minutes of April 4, 1905.

Good Samaritan and the Cincinnati Hospital. Once again the faculty discussed the advantages of having its own teaching hospital.[51]

The Post-Graduate School of the Medical College of Ohio opened on April 15, 1907 offering practitioners a two month course on a multitude of subjects in medical science. The curriculum was designed to review medical practice by specialty and matriculants could take the entire program or choose whichever topics interested them. Although lectures were given, discussions were a more important pedagogical method, for the faculty clearly recognized the value of their students' years of experience. The curriculum also included demonstrations of new methods of laboratory analysis, physical diagnosis and treatment.[52]

In all, fourteen physicians, the majority from around Cincinnati attended. The medical faculty had mailed descriptive brochures to 11,500 physicians in Indiana, Ohio and Kentucky. Some forty-eight responded asking for more information. However, most of the busy prac-

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51 "Report to the Executive Faculty on the Post-Graduate School," Ohio Faculty Minutes, Oct. 4, 1906.

52 "Courses in Graduate Instruction to be Given at the Medical College of Ohio," Medical Department of the University of Cincinnati, 1907.

titioners found it impossible to get away and postponed the course for another year. Given the response, the outlook for the Medical College of Ohio's latest endeavor looked bright.[53]

Ohio's promising future lay in contrast to Miami's dim prospects of the need for meeting the ever increasing costs of more laboratories, equipment and a larger teaching staff. Each year the Miami faculty worried about its ability to attract well qualified students over larger university affiliated medical schools like Ohio. President Dabney was determined not to allow progress bypass Miami with its talented medical faculty and long history of excellence. Therefore in the spring of 1908, after a period of three years, Dabney attempted once again to bring the city's two regular medical schools together, this time with success.

Dabney put the question of merger to the medical faculty in conjunction with a plan for changing the medical college's 1896 contract with the university. After almost twenty years of union, Dabney thought that the time seemed ripe for the medical department to

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[53] "Report of the Secretary and Treasurer of the Graduate Department for the Course of 1907," Contained loose in Ohio Faculty Minutes. Dr. Horace Whitacre was in charge of administrative details.

relinquish control of its internal policies and financial affairs and to recognize once and for all that the interests of the department and the university were, as Dabney repeatedly demonstrated, one and the same. For its part, the medical faculty freely acknowledged that the gradual loss of its autonomy had not proved disastrous but had in fact fostered growth and progress. In addition, the faculty indicated to Dabney its willingness to consider again a plan for merger with Miami Medical College.[54]

Dabney did not act until he received similar assurances of cooperation from the Miami faculty as well. This time negotiations moved swiftly and smoothly. In June 1909, union was achieved under a plan many of whose features had earlier been rejected. First, full control of the new Ohio-Miami Medical College, as it was named, was vested in the university's board of trustees, including appointments to the faculty, terms of admission and graduation, and general internal policies. Dabney, who served as dean during the school's first year, included as many faculty members as possible from both schools in order to offer the best possible instruc-

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54 Letter, Robt. W. Stewart, Chairman of the Committee on Professional Schools, Board of Trustees, to Dean Forchheimer, May 27, 1908. Ohio Faculty Minutes. See also Secretary Phelps' reply of May 29, 1908.

tion available in a wide range of medical specialties. At least for the first session virtually every professor from both schools was given a clinical appointment. Provisions for the clinical departments, however, did not apply to the preclinical sciences, positions which Dabney thought should be filled by "regularly salaried men, who agree to give full time to the work of teaching adn research." Therefore, while depending on voluntary appointments in the clinical departments, Dabney set out to find competent scientists for the chairs of anatomy, chemistry, physiology and pathology.[55]

The merger agreement contained no provision regarding the admission of women to the new Ohio-Miami Medical College. However, it specified that all of Miami's students would transfer to the new college, a group which included women. Since its merger with the Laura Memorial Woman's Medical College in 1903, Miami had, without incident and without complaint by students or faculty, accepted females. Now in 1909, even though the merger agreement made no mention of the fact, for the first

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[55] "Memorandum of Agreement, Ohio Faculty Minutes, June 1909. See also Letter, Charles Dabney to Henry S. Pritchett, June 30, 1908. Abraham Flexner Papers, Box 18, Library of Congress.

time women entered the university's medical department. After that, although no efforts were made to recruit them, women were admitted to the college of medicine on the same basis as men.

Delighted with the merger, Dabney immediately began making plans for the future of the new medical school. Exuberantly, he wrote to Henry Smith Pritchett, an old friend and former president of M.I.T., who was now head of the Carnegie Foundation for the Advancement of Teaching, that he intended to build a "great, new, modern scientific" school of medicine. The "present proposition," he told Pritchett, "is to take in the Miami Medical College...and then to reorganize both in connection with our new City Hospital..." It was, he continued, "most significant and encouraging" that Miami was willing to surrender its charter property and all rights to place itself under the control of the university. Even more significant to Dabney was the fact that the university's medical faculty welcomed Miami and promised to "cooperate with us in the consolidation. It is," he concluded, "altogether one of the finest things that has happened in my experience."[56]

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[56] Letter, Charles Dabney to Henry S. Pritchett, July 1, 1908. General Education Board Papers, Box 706, Rockefeller Archives.

Eager to spread the news of his success, Dabney also wrote to another old friend, Wallace Buttrick, who served with him on the Southern Education Board and was now president of the General Education Board.[57]

Dabney's success in uniting the two medical colleges did not come easily. He succeeded in his goal only when two issues regarding medical education were finally settled. One had to do with the fact that the study of medicine properly belonged in the university. However, union was delayed not because either faculty doubted the validity of the idea but rather because the two had been longtime rivals and found it difficult to cooperate and compromise. The second issue, equally as troublesome as the first, had to do with laymen, in this case the university's president and board of trustees, assuming an active role in guiding the internal affairs of the medical department. Previously the Ohio faculty vigorously opposed attempts by Howard Ayers to impose his authority in matters traditionally left to the faculty's judgment. To Dabney's great credit he made the university's authority more palatable to the medical faculty. Rather than confronting them by insisting on his presidential perogatives, Dabney

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57 Letter, Charles Dabney to Dr. Wallace Buttrick, July 1, 1908. General Education Board Papers, Box 706, Rockefeller Archives.

clearly articulated the place and the role of medical education in the university as well as the institution's larger function in society. His arguments managed to convince the medical faculty once and for all that its interests were one and the same with those of the university. Ohio's closer relationship to the university as well as the merger between the Medical College of Ohio and Miami Medical College occurred within this context. Dabney employed the very same argument as he and Dr. Christian R. Holmes undertook an active campaign, beginning soon after the merger, to gain active control of Cincinnati's new municipal hospital.

Chapter IV
Reforming Medical Education: A National Phenomenon, 1900-1913

I

During the first decade of the twentieth century, the movement to reform American medical colleges gained considerable momentum. Almost conspicuous in its previous absence from the field, the American Medical Association, by virtue of an extensive reorganization, acted shortly after the turn of the century to assume leadership of the still fledgling and somewhat fragmented campaign for reform. Beginning in 1901, the Journal of the American Medical Association (JAMA) supported reformers' efforts by the annual publication of an educational number in which editor Dr. George Simmons reviewed progress and mapped out steps for the future. Simmons based his judgments on statistics collected from various medical colleges throughout the nation regarding available facilities, curriculum and faculty size, statistics which the journal presented in table form.[1]

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[1] James G. Burrow, AMA: Voice of American Medicine (Baltimore: The Johns Hopkins University Press, 1963), p. 19. An otherwise good description of the A.M.A.'s history, this work gives little attention to its efforts in medical education. See also JAMA 37: 731-773 (Sept. 21, 1901). This is the first educational number.

Although Simmons encouraged and advanced the purposes of the Associaiton of American Medical Colleges as well as its less demanding counterpart, the Southern Medical College Association, he nevertheless considered them both too limited in scope and appeal. Some of the nation's leading medical colleges, for example Columbia University's College of Physicians and Surgeons and Jefferson Medical College in Philadelphia had never joined the Association of American Medical Colleges and others, like Harvard, resigned from the organization. Likewise, the Southern Medical College Association, which was founded in November 1892 for the "sole purpose of raising the standard of medical education in the South," faced similar problems. Therein lay Simmons' criticism; both associations spoke to and for limited constituencies. And the fact that the two organizations remained separate only fragmented the reform movement further.[2]

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[2] For a comparison of member schools, see "Association of American Medical Colleges," JAMA 43: 563-664 (Aug. 20, 1904). Also, "Association of American Medical Colleges: Transactions Fifth Annual Session," Bulletin of the American Academy of Medicine I: 531-536. Also, "Association of American Medical Colleges," JAMA 43: 510-511 (Aug. 13, 1904); "Rules and Regulations for the Organization and Maintenance of the Southern Medical College Association," JAMA 19: 674 (Dec. 3, 1892); "The Southern Medical College Association versus the American Medical College Association," JAMA 20: 81 (Jan. 21, 1893). See also letter to

In 1904, the A.M.A. took steps to remedy the situation and assume leadership of the reform campaign by creating the Council on Medical Education, a permanent body to replace its earlier temporary and usually inactive committee on education. Arthur Dean Bevan, professor of anatomy at Rush Medical College and a prominent Chicago surgeon, was appointed chairman of the council by the A.M.A.'s Board of Trustees. The council's members were chosen to bring as wide a variety of viewpoints from

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the editor from W.T. Briggs and G.C. Savage, JAMA 19: 758-759 (Dec. 24, 1892). Also, "Medical College Associations and their Influence on Higher Standards of Medical Education," JAMA 12: 775 (Sept. 21, 1901). This editorial was in the first educational number of the journal. It gives a very clear picture of the A.M.A.'s argument favoring increased preliminary education as well as more scientific and clinical training for all of the nation's medical colleges.

various regions of the country together to plot the future course of reform. Council members included Victor C. Vaughan, dean of the University of Michigan Department of Medicine, Wm. T. Councilman, professor of pathology at Harvard Medical College, J.A. Witherspoon of Vanderbilt University's Medical Department and C.H. Frazier of Philadelphia.[3]

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[3] "Address of the President to the House of Delegates," JAMA 42: 1574-1575 (June 11, 1904). President Frank Billings recommended the creation of a permanent council on medical education. See also JAMA 42: 1646 (June 18, 1904) for a description of the council and its duties. W.T. Councilman was appointed to a one year term, J.A. Witherspoon to two years, Charles Frazier, three years, Victor Vaughan four years and chairman, Arthur Dean Bevan to five years. The council was directed to make annual reports on medical education to the HOuse of Delegates and to recommend ways to improve and influence the reform movement. A Reference Committee on Medical Education was selected from the delegates to review the council's annual reports and to make recommendations to the larger house. In effect, however, the committee, chaired by a different delegate each year, rubber stamped the council's work each year enthusiastically endorsing the efforts of Bevan and his colleagues. See also "The Council on Medical Education," JAMA 43: 467 (Aug. 13, 1904), an editorial which sets forth reasons for the council's creation.

Bevan had a clear vision of the role which the council should take in the reform movement. "It is not the purpose of the Council on Medical Education," he insisted... "to attempt to arrogate to itself any special powers, nor does it desire either to criticise or to interfere in any way with any of the agencies which are already in the field." Rather the council, in Bevan's view, would work to bolster the efforts of the Association of American Medical Colleges, the Southern Medical College Association and the various state boards to improve medical education. He intended for the Council on Medical Education to become a clearinghouse for information, a gatherer of statistics to help garner support for needed changes. In addition, the council would act as a central agency drawing together and perhaps coordinating the efforts of the others, whose influence was necessarily limited to their constituents. Under the council, Bevan hoped that the reform movement would truly become national in scope.[4]

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[4] "The Conference of the Council on Medical Education," JAMA 44: 1374-1375 (April 29, 1905) which describes the council's first annual conference. Although twenty-nine govenors appointed representatives from their state boards, only fourteen attended. See also, "Association News," JAMA 44: 147 (Jan. 14, 1905); "Council on Medical

Bevan had very strong convictions about what was needed to be done to improve America's medical colleges. For one thing standards of preliminary education needed to be strengthened. All too often, he argued, medical students were too poorly prepared to comprehend with any ease the fundamental principles of medical science. Then too, Bevan advocated a five-year medical curriculum starting with fundamental sciences and terminating with a year's internship. In fact, the feisty chairman was one of the first of America's leaders in medical education to argue loudly and consistently the advantages of the internship. Under his leadership the council became involved not only in propagating the idea but later in setting qualifications and inspecting hospitals. However, that

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Education," JAMA 44: 1123 (April 8, 1905); "Council on Medical Education of the American Medical Association: First Annual Conference," JAMA 44: 1470-1471 (May 6, 1905). Arthur Dean Bevan, a graduate of Rush in 1883, was a founder of the American Surgical Association and served as president in 1932. He was also president of the A.M.A. in 1917-18 and was editor of the Textbook of Anatomy by American Authors as well as the Textbook of Surgery by American Authors.

was all still in the future. In 1905, Bevan was simply determined to present a clear and comprehensive picture of what needed to be done including licensing examinations to test "in the most thorough way" the graduate's knowledge before admitting him to practice.[5]

A primary obstacle to the advancement of reforms, Bevan realized, was the inequality of educational standards in different states and areas of the country, particularly the South. Therefore, Bevan suggested, that the Council on Medical Education should organize and host a general conference on medical education inviting representatives from each state board as well as representatives from the surgeons general of the Army, Navy and Marine Hospital Service.[6]

Somewhat to Bevan's disappointment only fourteen states

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[5] Ibid., "Council..." (May 6, 1905). Also, "The Education of the Interne," JAMA 43: 469-471 (Aug. 13, 1904). See also Morris Fishbein, A History of the American Medical Association, 1847-1947 (Philadelphia: W.B. SAunders Co., 1947), p. 894.

[6] "Association News," (Jan. 14, 1905) and "Council on Medical Education," (April 8, 1905).

plus the federal health services sent delegates to the council's first conference on medical education held in Chicago on April 20, 1905. Others attending included John Dodson, who represented the Association of American Medical Colleges, and G.C. Savage from the Southern Medical College Association. Citing state laws, Bevan illustrated existing conditions in American medical education. All of the fifty-two states and territories, he pointed out, had some type of legislation regarding medical education, some of course were better than others. For example, while thirty-five states required a diploma from a recognized medical college plus passage of a state examination in order to practice medicine, only five states required a test for admission to medical school. Despite such disparities, Bevan claimed that much progress had been made. He hoped that within only a few years, with the help of the Council on Medical Education, standards would be raised so that all states adhered to at least minimum requirements. Attendants at the conference not only endorsed Bevan's plans but enthusiastically agreed to hold annual meetings to measure progress.[7]

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[7] "Council on Medical Education of the American Medical Associaiton: First Annual Conference, (May 6, 1905).

To reach his goal, Bevan set the council's members to work devising standard admission requirements and a uniform curriculum. Approaching the problem methodically, Bevan requested that George Simmons compile a list of various admission requirements according to state. After that, he appointed Vaughan and Witherspoon to work out a list of minimum requirements for admission for the council's endorsement. Like Bevan, Vaughan was convinced that basic knowledge of scientific principles was necessary to the medical student's comprehension of medical science. And, Witherspoon and Vaughan found that, like the Medical College of Ohio's, many other medical faculties were frustrated by their first-year students' lack of scientific preparation. The two men therefore outlined a basic but demanding curriculum composed of subjects which could be studied in high school but which were essential to success in medical college. These included courses in Latin, English, German, higher mathematics, physics, chemistry and general biology. Because they found that many medical schools allowed those who failed to measure up to stated admission requirements, the two recommended that state boards assume responsibility for judging a candidate's competence to enter medical college.[8]

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[8] JAMA 44: 1471-1472 (May 6, 1905).

Under Bevan, the Council on Medical Education also drew up a standard medical curriculum, a project carried out by Councilman and Frazier. After some study of data on different medical colleges, Councilman noted striking differences not only in arrangement but even in the actual content of the medical curriculum. No two schools, it seemed, agreed on anything. Among other things, the amount of time devoted to any one course like anatomy varied vastly from school to school. And all too often, clinical work claimed only a small portion of the students' time. The data which Simmons gathered clearly revealed wide discrepancies and convinced Councilman, Bevan and the others more than ever of the value of their work.[9]

After extensive discussion, the council agreed, that to preserve harmony among reformers, it would be best to adopt the Association of American Medical College's model curriculum composed of some four thousand hours, arranged in a graded fashion according to the amount of time allotted each subject. Bevan and the council also agreed with the association that minimum entrance requirements for medi-

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[9] Ibid., pp. 1472-1472. Councilman and Frazier each presented a report. The two differed little and only in terms of the total hours. Both were in agreement basically with the association's curriculum.

cal school ought to include a diploma from an accredited high school in addition to proficiency in mathematics and various sciences. Having reached a conscensus on these points, the council set out to bring about reforms by advocating minimum standards nation wide.[10]

Wishing to strengthen the council's role as advocate, Bevan suggested that either the council or state boards inspect medical colleges. John Dodson from the Association of American Medical Colleges agreed wholeheartedly that inspections would be beneficial.[11] Only Savage of the Southern Medical College Association appealed to Bevan and the state boards to forego such inspections, arguing that the South needed more time to improve itself primarily in the area of secondary education. Conditions were such that the Southern Medical College Association required only a grammar school education and two years at an accredited high school, or an equivalent education whose quality the superintendent of public instruction could certify.[12]

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10 Ibid.

11 "The Council on Medical Education," (Aug. 13, 1904).

12 JAMA 44: 1475 (May 6, 1905).

Despite Savage's pleas, the council and the Association of American Medical Colleges were certain of the advantages which inspections held for the progress of reform. In fact in 1904, enthusiasm was such that Dr. Fred Zapffe, secretary of the Association of American Medical Colleges, embarked on visits to nine member schools before discovering that money had not been appropriated.[13] The following year at the Council on Medical Education's conference, John Dodson suggested that such inspections ought to be conducted by state boards. Others, including George Simmons, argued that inspections involved costs which many states might not be willing to assume and that the many different boards would be unable to conduct equally thorough and rigid inspections. Wishing to protect the reputations of schools within their states, it would be only too easy for any one board to overlook shortcomings. Even Savage, who agreed on the basic necessity and benefits of such inspections, felt that the Council on Medical Education was the best suited for the task of judging adherence to standards which it, at least in part, devised.[14]

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[13] "Society Proceedings: Association of American Medical Colleges," JAMA 43: 511 (Aug. 13, 1904).

[14] "Association of American Medical Colleges," JAMA 43: 345-346 (July 30, 1904). Also, "The Conference of

Despite agreement for the need, it was 1907 before the Council on Medical Education undertook any inspections.[15] In the meantime, Zappfe visited member schools of the Association of American Medical Colleges and the JAMA continued to publish its annual educational issues. IN 1905 under the direction of Bevan and the Council on Medical Education, the journal began to choose certain medical colleges throughout the country worthy of emulation by others in their region. For example, Cooper Medical College in California was praised for its large modern laboratories and lecture rooms and Georgetown Medical College in Washington, D.C. was characterized as excellent in every regard. Clearly JAMA's editor, George Simmons, in cooperation with the council meant to lead by persuasion. Their method was just as important as their goal. Tra-

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the Council on Medical Education," JAMA 44: 1374-1375 (April 29, 1905). Also, Minutes of the Council on Medical Education, April 29, 1907, American Medical Association, Chicago, Ill. Also, Minutes for Dec. 28, 1908 and Dec. 30, 1911 for discussions of methods and results of inspections. Also, N.P. Colwell, "The Council on Medical Education and the Work for Higher Educational Standards," Rush Alumni Association Bulletin 5: 3-6 (April 1909).

15 Ibid., Colwell. Colwell insists that the council was the first organization to inspect every medical college in the country, a claim which Flexner would surely have disputed.

ditionally medical colleges, like the Medical College of Ohio for example, looked to Eastern schools as models of excellence. Now, however, Simmons suggested that first-rate medical colleges were located in other areas of the country and that they too could and should serve as regional models.[16]

In addition to efforts directed at medical colleges, JAMA also urged individual physicians to become involved in the campaign to improve medical education by offering advice to perspective medical students. An editorial encouraged local practitioners to become knowledgeable about the medical colleges in their area as well as what was involved in modern scientific medical education. In order to turn out competent practitioners, a medical college needed well-equipped laboratories in anatomy, chemistry and physiology, each "under the charge of a specially qualified man, who as a rule, should give his whole time to teaching and investigation." In addition, JAMA continued, the better medical colleges offered their students bedside instruction, small hospital ward classes and

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16 See for example, listings in the first educational number, JAMA 37: 745-755 (Sept. 21, 1901). In 1905, the wording was still careful and for the most part complimentary. See JAMA 45: 556-564 (Aug. 19, 1905).

experience in the clinical laboratory. Other factors important to the operation of a modern medical school included university affiliation, a well-developed library, and endowments of sufficient size to ensure the college's future growth and development.[17]

A year later, in 1906, the Council on Medical Education and JAMA went a step further in their efforts to identify the quality of education offered by individual medical colleges by publishing results of state board examinations according to school. Never before had such information been made public. As Bevan expected, most of the well-known and respected medical schools like Harvard and the College of Physicians and Surgeons, as well as the Medical College of Ohio, placed in the first class with a failure rate of ten percent or less. He noted that the second class, with a failure rate of eleven to twenty percent, also contained some good schools, ones which he hoped would take quick action to avoid future embarassment. Thirty-eight medical colleges made up the third and lowest class, with failures above twenty-one percent. On the basis of this state-by-state data, Bevan concluded that five states, Illinois, Missouri, Maryland, Kentucky and

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17 "The Influence of the Private Physician on Medical Education," JAMA 45: 537-539 (Aug. 19, 1905).

Tennessee were "especially rotten spots" and urged their state boards to take appropriate action to remedy the situation.[18]

During 1907, Bevan and Cowell personally visited 130 medical colleges in the United States, the first such inspection in this country. They judged eighty-two of the schools to be satisfactory, forty-six "doubtful" in quality and two "absolutely bad."[19] That their categories were nebulous is obvious and, given the number of bad schools

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18 "Report of the Council on Medical Education," JAMA 46: 1853-1858 (June 16, 1906). Up to this time the journal regularly reported state board failures but schools had never before been ranked. Ste, for example, "State Board of Registration," JAMA 43: 486 (Aug. 13, 1904). The Journal appears to have published the information on various states as it became available. On the subject of licensure, see Richard H. Shryock, Medical Licensing in America, 1650-1965 (Baltimore: Johns Hopkins University Press, 1967). Also, Robert C. Derbyshire, Medical Licensure and Discipline in the United States (Baltimore: Johns Hopkins University Press, 1969). Both works provide broad overviews of the topic.

19 Colwell, "The Council on Medical Education..."

which they found, it is not too much to say that Bevan and Colwell gave the benefit of the doubt whenever possible. It was, Bevan decided, time for the council to set down exact criteria which would gain quick acceptance as the definition of a modern scientific school of medicine. Then the council could proceed with inspections and medical faculties, who wished to upgrade their standards, would have directions for doing so. In 1910, the council therefore adopted and published ten points of inspection which took into account not only state board scores but a school's requirements for admission, the character of its curriculum and its adherence to the Association of American Medical Colleges' model, as well as library resources and teaching equipment. The council also outlined specific features necessary for laboratories and hospital facilities. Regarding the faculty, Bevan and the council's members stressed the necessity for fulltime professors to be in charge of the preclinical sciences.[20]

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[20] Minutes of the Council on Medical Education, Dec. 28, 1907. Also, "An Outline of the Essentials of a Satisfactory Medical College," Flexner Papers, Box 18. And, "Meeting of the Chairmen of the Ten Subcommittees on Medical Curriculum," Minutes of the Council on Medical Education, April 4, 1909.

Bevan's determination to set minimum standards for medical colleges was not confined to regular schools but included sectarian colleges as well. He was convinced that the time had come to unify American medical education regardless of the origins of individual medical schools. The practice of medicine, he reasoned, was not a philosophic art but a specific science, supported by proven principles and detailed methods, the knowledge of which was essential to practice. Hoping to heal the rifts which had for so long divided the American medical profession, Bevan invited the American Institute of Homeopaths and the National Eclectic Medical Association to send representatives to meet with the council in 1907 and discuss ways in which the three organizations might cooperate for the common good.[21]

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[21] Minutes of the Council on Medical Education, Oct. 25, 1907. Bevan also resolved that each state board ought to make regular inspections and eliminate those schools operating below acceptable standards. His resolution passed easily.

II

Disputing the need for uniformity proclaimed by Bevan, the sectarians, led by E.H. Stevenson, secretary of the National Eclectic Association, refused all cooperation. Who, Stevenson asked sneeringly, made [Bevan] sponser and arbitor for all things medical throughout the United States?" Therein lay the problem, Bevan's monolithic view of medical science versus the sectarian's pluralistic view of medical practice. The regulars were wrong, Stevenson insisted in their emphasis on preliminary studies and their obsession with the scientific basis of medicine. What the sick wanted, he said, was to be cured not to hear a learned discourse on pathology or bacteriology. To counter Bevan and the increasingly powerful Council on Medical Education, Stevenson urged sectarians to obtain representation on every state board, as they already had done in Ohio and several other states. He also suggested that state boards make their own college inspections using guidelines provided by the sectarians. Only in this way could the eclectics and homeopaths protect their rights

and guarantee their future existence.[22]

Perhaps, Bevan realized, the medical profession could not heal its own wounds to overcome the longtime acrimony between sects and regular physicians and create a new and unified medical profession. Therefore in 1908, he invited Henry Smith Pritchett, president of the Carnegie Foundation for the Advancement of Teaching to come to Chicago.[23] Pritchett, who was very interested in medical education, agreed to assist the Council on Medical Education in any way he could. Later in November 1908, at Pritchett's

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22 E. H. Stevenson, "Report to the National Eclectic Medical Association," Flexner Papers, Box 18. While the Ohio State Board had invited an eclectic to go along on state inspections, Stevenson reported that he had been unable to go. In addition, he noted that eclectics declined invitations from both the Michigan and Iowa boards. While he was in Chicago, Stevenson obtained specific ratings of eclectic colleges from Colwell. He found these arbitrary and criticized the council for showing the unfavorable reports to the state boards involved but not the the schools themselves. See also Minutes of the Council on Medical Education, Oct. 25, 1907. On sectarians, see Wm. G. Rothstein, American Physicians in the Nineteenth Century: From Sects to Science (Baltimore: Johns Hopkins University Press, 1972).

23 Bevan realized that the council needed outside help despite the fact that the group's work was widely acclaimed. In 1908, JAMA printed tables showing "existing and extinct schools." There were at the time 152 medical schools while 374 had been put out of business, many for fraud.

suggestion, the trustees of the Carnegie Foundation for the Advancement of Teaching authorized an extensive study of both medical and law colleges in the United States. Although at first limited to these two fields, Pritchett hoped that at some later date the foundation could undertake a study of schools of theology. Pritchett was interested in determining the proper place of the professional school, which formerly existed independently, in the university and society at large. To Pritchett the foundation's project was educational and not primarily legal or medical. At issue were questions of educational method and philosophy, issues which concerned all of society and should be addressed from that viewpoint.[24]

As Pritchett was searching for someone to conduct the study of medical schools, President Ira Remsen of Johns Hopkins University, sent to him Abraham Flexner, a young man recently returned from Europe who was looking for employment. Flexner, the sixth of nine children of Moritz and Esther Flexner, was born in Louisville, Kentucky in

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[24] Abraham Flexner, Funds and Foundations: Their Policies Past and Present (New York: Harper, 1952), p. 108. See also Henry S. Pritchett: A Biography (New York: Columbia University Press, 1943). Although uncritical, Flexner tells the interesting story of Pritchett's life and many achievements.

1866. After completing a common school education there, he went to Johns Hopkins University where he graduated in 1886. He then returned to Louisville where in 1890 he started a school to prepare boys for college. In 1905, following his marriage to Anne Crawford, Flexner attended graduate school at Harvard. After that, the young couple traveled in Europe while Flexner conducted a comparative study of European and American higher education.

In 1908, Flexner published The American College, a work which was poorly received primarily because of the strong criticisms which Flexner leveled at Hardard University's elective system. Still, Pritchett was impressed with the breadth of Flexner's undertaking. Moreover, he agreed with Flexner's conclusion that American colleges and universities failed in their attempt to provide a "broad and flexible scheme of higher education" because of their ill-defined relationship to secondary schools and their chaotic curriculae.[25]

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[25] Abraham Flexner, The American College (New York: The Century Company, 1908), p. 215. Flexner wrote the book, he said, based on his experience of nearly twenty years preparing students for college, two years as a graduate student and a year of observation in England and Germany. (p. lx). See also Abraham Flexner, I Remember (New York: Simon and Schuster, 1940), p. 109. Twenty years later, Flexner rewrote his autobiography. See Abraham Flexner, An Autobiography (New York: Simon and Schuster, 1960). The two works do not differ substantially.

When Pritchett offered Flexner the opportunity to carry out the foundation's proposed study on medical education, the younger man was dumbfounded. Regaining his composure, he pointed out to Pritchett that he was surely confusing him with his famous brother, Simon, head of the Rockefeller Institute for Medical Research. I have, he said, never set foot inside a medical school. "That's precisely what I want," Pritchett replied, explaining that professional schools should be studied "not from the point of view of the practitioner but from the standpoint of the educator." Quickly Flexner accepted Pritchett's offer.[26]

From the very beginning, Pritchett conceived of a broad study, one intended to strike a blow for change in medical education. He hoped that in the end the study would help to show the American public exactly how a medical school should be conducted and state legislatures the exact nature of laws required to guaranteed their proper existence. Flexner's object was to visit 155 medical colleges in the United States and Canada. Political boundaries mattered little. After all, medical colleges

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[26] I Remember, pp. 110-111.

in both countries traced their origins and traditions to English and Scottish institutions and in many ways shared similar trends in development and unfortunately, many of the prevailing low standards.[27]

Certain that mouthing high ideals mant little without illustration, Flexner sought a model medical college against which to measure others. He settled on Johns Hopkins explaining that Dean Welch and his faculty knew what a medical college ought to be for they had, in fact, created one in keeping with the best features of medical education in England, France and Germany, patterns which they carefully adapted to American conditions. Flexner spent several months visiting Johns Hopkins and conferred with various faculty members, Franklin Mall in anatomy, William Stewart Halsted in surgery and John Howland in pediatrics on methods of teaching, facilities and their general philosophy of medical education.[28]

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27 Abraham Flexner, Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching (New York: The Carnegie Foundation for the Advancement of Teaching, 1910), pp. x-xvii. See also Carleton B. Chapman, "The Flexner Report by Abraham Flexner," Daedalus 103: 105-117 (Winter 1974). Also, Howard S. Berliner, "A Larger Perspective on the Flexner Report," International Journal of Health Services 5: 573-592 (1975).

28 I Remember, p. 115. See also Richard H. Shryock, The

After several months of study, Flexner was prepared to begin his project. So certain was Flexner of his goals that he successfully opposed Pritchett's suggestion that an advisory committee of physicians ought to be appointed to help him.[29] Pritchett was, however, insistant that he and Flexner at least meet with the members of the Council on Medical Education. Consequently on Dec. 28, 1908, Pritchett and Flexner met informally with the council at the Waldorf-Astoria Hotel in New York City to discuss the proposed "scheme for a projected report on medical education in the United States and Canada."[30]

Unique Influence of the Johns Hopkins University on American Medicine (Copenhagen: Ejnar Munksgard, 1953).

29 Flexner was always reluctant to admit that the idea for the study originated with Bevan and the council. In I Remember, he noted only that Pritchett had "already been in touch" with Bevan. (p. 114). In Funds and Foundations, published in 1952, he said that Pritchett went to Chicago on Bevan's invitation and at once recognized the possibilities of such a study, but that Pritchett had to point out to Bevan that the study was educational and not medical and that it would have widespread ramifications. Flexner's points fit in nicely with his later quarrels with Bevan over fulltime medicine. The two were longtime enemies.

30 "Scheme for a Projected Report on Medical Education," Flexner Papers, Box 21. See also Minutes of the Council on Medical Education, Dec. 28, 1908.

For its part, the Council on Medical Education was delighted with the action of the Carnegie Foundation for the Advancement of Teaching, declaring that an independent report by a disinterested part would go far to develop public opinion. However, despite their enthusiasm, it was clear that significant differences of opinion already existed between Flexner and council members. For one thing, Bevan and Councilman took issue with Flexner's insistance that only one type of medical college ought to exist in which science was thoroughly stressed. Medical practitioner alike, Flexner insisted, needed the same basic medical education. On the other hand, both Councilman and Bevan thought there was a place for medical colleges which set out to educate good practitioners, where science was viewed as a handmaiden of medicine and not as a goal in itself and where students learned scientific principles and their applications not the pursuit of scientific discoveries. Although the council agreed with Flexner that a uniform standard of medical education could and should eventually be achieved, there was a critical difference of opinion here as well. Flexner wanted all medical colleges to aspire to the heights of Jouhs Hopkins while the Council on Medical Education hoped to impose minimum

standards on medical colleges. While Flexner had visions of soaring eagles, the council, perhaps more realistically, had its feet firmly planted on the ground. However, the tenacity and strength of the visionary Flexner would, at least in the short run, prevail.[31]

Flexner began his work at the Medical Department of Tulane University in New Orleans where, to his pleasure, he found fulltime professors in charge of the preclinical departments and "new and excellent laboratories." He was also pleased to learn that the great Charity Hospital was "freely " used by the medical faculty although he noted "certain defects of organization , equipment and relationship (which) must be corrected in order to render the situation ideal."[32]

After only a few inspections, Flexner quickly learned how to discern the real quality of a school. A mere thirty minutes reading student records at random told of the actual matriculation requirements. Flexner also found that a few questions told him all he needed to know about the faculty's qualifications as well as the school's

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[31] "Scheme," pp. 1-2.

[32] Medical Education in the United States and Canada, pp. 231-232.

financial situation. And a mere "whiff" at the door of the laboratory revealed to him exactly how anatomy was taught.[33]

Many colleges, Flexner found, went to extreme lengths to cover up shortcomings. For example, at an osteopathic college in Des Moines, Iowa, the dean accompanied Flexner on a tour of the building, all the while apologizing that the laboratories were locked and that the janitor, who was in sole possession of the keys, was nowhere to be found. Flexner left only to return later. For five dollars, the janitor opened the doors marked anatomy, physiology and chemistry. In each and every case, as Flexner suspected, the rooms contained only chairs, a table and a blackboard, with no evidence of any scientific equipment whatsoever.[34]

After Flexner visited all of the medical schools in a given area, he returned home to New York where he wrote his reports. He then submitted them to their respective deans for corrections or additions. In at least one instance this practice brought immediate results. Flexner found conditions of the clinics of the State University of North Carolina so appalling that he employed a photographer to take pictures. Dr. Pritchett directed Flexner to send

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33 I Remember, pp. 12-121.

34 Ibid., p. 122.

the photographs to the university's president who was unaware of the conditions and properly horrified. Promptly the clinics were closed.[35]

However, such swift and positive action proved the exception rather than the rule. In all too many instances the deans argued with Flexner's findings, calling them lies or at other times imploring with him to change the report. Frequently rumors about the report's contents prompted action by a faculty or dean. For example, in the spring of 1909, J.W. Holland, a member of the Jefferson Medical School faculty, wrote to Flexner, that he had heard that Jefferson would receive "a low rank" because of poor entrance requirements. Such was not the case he argued. If poorly prepared students had gained entrance to Jefferson, it was because the state and not the school had loosely interpreted the college's requirements.[36]

In another example, Dean Hyde of Bowdoin Medical College in Maine wrote to Pritchett saying that the medical faculty was "very grateful for the frank criticisms" contained in Flexner's draft. At once the faculty met to set matters straight appointing committees to raise funds, buy equip-

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35 Ibid., pp. 122-123.

36 Letter, J. W. Holland to A. Flexner, April 12, 1909, Flexner Papers, Box 19.

ment, improve teaching methods and to "remove as soon as possible whatever just grounds exist for criticisms." However, the dean insisted, some of Flexner's complaints were not justified and should therefore be deleted. For example, the dispensary was, he insisted, well-equipped for the "scientific exmamination of sputum, urine, stomach contents and blood." "How?" queried Flexner in the letter's margin. Then too, the dean pointed out, while it was true that students did not have their own microscopes, they were free to use the school's. "Absurd," Flexner retorted. Dismissing the dean's endless excuses, Flexner's report which called the city dispensary used by the school, "thoroughly wretched" and noted that the anatomy professor looked in on his class only occasionally, stood as written.[37]

Flexner traveled the length and breadth of the United States and Canada. He was shocked and dismayed at what he found and did not hesitate to levy harsh criticisms. The University of Oregon's Medical Department, he wrote, was in a "wretchedly-kept building."[38] Worse was the anatomy

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37 Letter, Wm. D. W. Hyde, Dean, Bowdoin Medical College, to Henry S. Pritchett, Feb. 23, 1910, Flexner Papers, Box 18.

38 Medical Education in the United States and Canada, p. 291.

laboratory at the Georgia College of Eclectic Medicine and Surgery which Flexner found "indescribably foul." The entire school was, in fact, so filthy that it had few equals, none worse.[39] To his dismay, Flexner found that no satisfactory medical college existed in Alabama where the university's medical department had a museum which contained only old wax and paper mache models and its library had only very old and musty books.[40] However, there were some bright spots on the horizon. Laboratories at the University of Toronto were, he concluded, "among the best on the continent."[41] And Cornell Medical School, a leader in reform, required three years of college for admission.[42] There was also Columbia's College of Physicians and Surgeons with its excellent Sloan Maternity Hospital and Vanderbilt Clinic.[43] And, of course, Flexner

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39 Ibid., p. 205.

40 Ibid., pp. 185-186.

41 Ibid., p. 323.

42 Ibid., pp. 268-269.

43 Ibid., p. 268.

found the laboratories at Johns Hopkins "unexcelled" in every respect and "ideal opportunities" in its clinics.[44]

Flexner's report, Medical Education in the United States and Canada, which was published in 1910, was much more than a critical survey. It was, in fact, a program for change. Flexner gave almost two hundred pages, eight chapters, to a discussion of medical education, explaining in detail the laboratories, clinical facilities, admission requirements and curriculum characteristic of the ideal modern medical college and its role in American society. And as he wrote, he drew on his findings to illustrate his points.

Besides laboratories for preclinical sciences, Flexner stressed the importance of the hospital ward as a scientific laboratory where students gathered data, analyzed test results and drew conclusions under the watchful eye of clinical professors. Just like the chemist or physiologist, the clinician was also a scientist who, like all scientists, had a responsibility not only to teach and pass on information but to search for new discoveries and thus advance the frontiers of medical science. Like their

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[44] Ibid., pp. 234-235.

counterparts in the preclinical sciences, Flexner argued that it was vital to the future of American medical education that clinical professors be fulltime employees of the university, men who completely abandoned private practice for academic life.[45]

Fulltime clinical medicine was not a new idea in 1910, nor was Flexner its creator, but rather its chief promoter. Flexner himself credited Franklin Mall, professor of anatomy at the Johns Hopkins Medical School, with having observed the merits of fulltime medicine while studying in Germany and praising the method to his American colleagues on his return home. The question of historical antecedents is not nearly as important as the fact that by the second decade of the twentieth century the idea of placing fulltime professors in clinical as well as preclinical departments was just beginning to receive widespread attention from medical educators in this country. Abraham Flexner was in no small way responsible for the debate which ensued over the merits of the fulltime system.[46]

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45 Ibid., pp. 91-104.

46 I Remember, p. 179. See also letter, Lewellys F. Barker, M.D. to A. Flexner, March 7, 1911, Flexner Papers, Box 19.

As Flexner well knew, fulltime medicine could not be achieved unless the university in question had its own teaching hospital. It was essential that the medical staff be composed of faculty members whose relationship with both the hospital and the university's medical department was free and unhampered, allowing both time and the necessary clinical facilities to develop research projects. It was also important that the fulltime system be faithfully and strictly observed, meaning that faculty members could, under no circumstances, conduct private consultations. When private patients entered the picture, Flexner warned in his report, the university lost control of the hospital. After all, the final test of the modern scientific medical school, he insisted, was clinical teaching. Medical schools which aspired to excellence had to cultivate clinical medicine.[47]

On this point Flexner took Harvard Medical School to task. Despite President Lowell's claim that Harvard would, in the near future, join in "intimate connection" with Peter Bent Brigham Hospital, Flexner criticized the college that it had taken so long to make effective use of the vast clinical resources of Boston. Moreover, he

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47 Medical Education in the United States and Canada, pp. 105-124.

was doubtful that Harvard could change the prevailing custom at the Brigham which bound the medical school to appoint clinical professors according to their seniority on the hospital's medical staff. Heirs to clinical appointments therefore also inherited university chairs. The hospital thus dictated to the university with the result that clinical teaching suffered.[48]

Again, in the case of Columbia University's College of Physicians and Surgeons, Flexner complained that " "all kinds of limitations interfere with effective scientific or pedagogic use, and made exceedingly difficult anything like intimate interplay between laboratory and clinical teaching."[49] President Nicholas Murray Butler refuted Flexner's claim insisting that New York's medical colleges, particularly Physicians and Surgeons, had been much more clinically productive than Flexner suggested. The medical

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[48] Ibid. p. 240. See also letter, A. Lawrence Lowell to Henry S. Pritchett, Feb. 21, 1910, Flexner Papers, Box 19.

[49] Medical Education in the United States and Canada, p. 268.

colleges turned out an enormous amount of research and literature, Butler said, the problem was that it remained unorganized and did not focus on any one hospital. He reminded Flexner that New York's hospitals had developed as independent and often competing institutions all too often run with little or no regard for their obligations to medical teaching. Overcoming such obstacles, Butler pointed out, would take time.[50]

Not long after Medical Education in the United States and Canada was published, Charles Eliot, former president of Harvard, wrote to Andrew Carnegie praising the breadth of Flexner's work but he warned that the "report is sure to excite the wrath of all the quacks, vendors of patent medicines, teachers in cheap medical schools, and victims of the 'healing' delusions."[51]

As Eliot predicted, schools criticized in the report reacted angrily to Flexner's charges. Their anger turned to fury when Collier's, a popular national magazine, summarized Flexner's findings in June 1910 and described some of the worst schools. Readers learned of

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50 Letter, Nicholas Murray Butler to A. Flexner, March 29, 1910, Flexner Papers, Box 18.

51 Letter, Charles Eliot to Andrew Carnegie, June 7, 1910, Henry S. Pritchett Papers, Box 3, Library of Congress.

an eclectic school in Lincoln, Nebraska which falsely claimed to give clinical instruction at nearby Cotner University. When Flexner asked to see the physiology laboratory in Lincoln, he was told that that too was taught at Cotner. However, once at Cotner he was informed that these subjects were taught in Lincoln. The result of this "merry-go-round" approach to medical education earned the college a dismal report and an infamous reputation throughout the country.[52]

Angrily, the dean of the Lincoln college fired off a letter to Collier's insisting that Flexner had indeed toured the college's fully equipped laboratories. Perhaps, he suggested, Flexner lied in his report proving that the Carnegie Foundation for the Advancement of Teaching was "part and parcel of a scheme or conspiracy...to control medical practice and medical colleges in this country." Calling Flexner the "dictator of American Medical Practice," the dean, an eclectic, insisted that there was room for diffeerence of opinion and consequently the existence of sectarian medical colleges and practitioners. "Think of one man," he said astonished, "assuming the authority he does to speak of a profession of such wide scope and

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52 "What the World is Doing: A Record of Current Events: Poor Physicians, Mercenary Medical Schools," Collier's June 11, 1910, p. 6.

so very many undetermined phases."[53]

Along with sectarians, many southeners were also angry with Flexner's report. George West, a professor at a small medical college in Tennessee, wrote to Collier's editor under the letter head of the Southern Medical Association and insisted that he spoke for the South in general. Flexner, West charged, "condemned our railways as he arrived, our hotels, as he tarried and our medical colleges as he passed on." In short, he came "having already condemned what he proposed to investigate" and only the "short and ugly word, liar" adequately described Flexner.[54]

West freely admitted that Southern medical colleges did not maintain entrance requirements similar to those of Harvard or the University of Pennsylvania. Nor, he added, did they pretend to turn out the same type of graduate. Practitioners in the South were educated to

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53 Letter, F. L. Wilmeth, M.D., Dean Lincoln Medical College, to P. F. Collier and Son, June 20, 1911, Flexner Papers, Box 18.

54 Letter, George R. West, M.D. to editor, Collier's, no date, Flexner Papers, Box 18.

the environment in which they served. No more than a high school education could or should be expected of them and no more than a "solid and thoroughly practical medical education." It was ludicrous, West said, to think of those "thoroughly trained, over-educated, top-heavy, unpractical" Eastern practitioners functioning as family doctors to hilltop farmers and inhabitants of small rural towns throughout the South.[55]

Not only were the sectarians and Southeners unhappy, reports even surfaced that the American Medical Association was not entirely satisfied with Flexner's work. Shortly after the report's release, some members of the association's Council on Defense of Medical Research met with members of the press. One reporter asked Dr. J. A. Capps of Chicago about the A.M.A.'s reaction to Flexner's findings. Capps insisted that the association was "greatly indebted to the Carnegie Foundation for its report." He added, however, that the Council on Medical Education had "independently investigated all the schools and has drawn similar conclusions, tho (sic) perhaps more lenient." Still, he insisted the "two bodies are in perfect sympathy

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55 Ibid.

in their aims."[56]

Capp's endorsement was echoed yet further qualified by JAMA. Never once mentioning Flexner by name, an editorial admitted that his report might "be subject to criticism in some matters of detail, but those who know the actual facts realize that, in general, the conditions set forth in the CArnegie report are true and indisputable." Be that as it may, the editorial said nothing at all about Flexner's program for reconstruction of the country's medical colleges. Instead, it declared that medical teaching should be developed in the future along the lines already laid down by the Council on Medical Education.[57]

And, while there was a need for better clinical facilities and increased bedside teaching in the nation's medical colleges, there was, in the council's view as well as the journal's, no reason that clinical teaching had to be restricted to fulltime professors.

Throughout his career, Bevan voiced strong opposition to strict fulltime clinical medicine. Besides being econ-

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56 Letter, J. A. Capps to A. Flexner, June 10, 1910, Flexner Papers, Box 13.

57 "Reports on Medical Education and Their Results," JAMA LV: 131-132 (July 9, 1910).

omically unfeasible, he argued that very few medical schools were ready to adhere to such a high educational standard. Moreover, he insisted that medical practitioners were better suited to clinical teaching and could share with their students actual experiences rather than the results of some clinical research project. Medical colleges, Bevan frequently reminded Flexner, existed to train practitioners and not to educate scientists. In Flexner's eyes, Bevan was stupidly naiive and he frequently made cruel remarks about the chairman of the Council on Medical Education and his inability to understand the necessity for the existence of schools which embraced the very highest ideals in medical education including the fulltime system of medicine.[58]

In 1911, Flexner was appointed secretary to the General Education Board, a Rockefeller philanthropy, and soon managed to launch a nationwide debate over fulltime clinical

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[58] Letters, Arthur Dean Bevan to Harry Pratt Judson, Dec. 31, 1914; and Judson to Flexner, Jan. 2, 1915, General Education Board Papers, Box 613. See also Minutes of the Council on Medical Education, June 9, 1924 and April 5, 1909. The council decided that it was not in the best interest of medical education to adopt uniform standards.

medicine. Determined to experiment with the system, Flexner persuaded the General Education Board in October 1913 to award a grant of $1.5 million to the Johns Hopkins Medical School in the name of its illustrious dean, William Henry Welch, on the condition that the incumbents in surgery, medicine, and pediatrics devote their entire time to teaching and research giving up any and all forms of private practice.[59]

It was not easy for Flexner to convince the medical faculty at Johns Hopkins to accept his rigid fulltime system. For two years before the General Education Board acted, he worked to persuade the faculty to try his experiment. Many of the faculty chorused the criticisms of William Osler, one of the world's most prominent and influential medical educators and a former professor of medicine at Hopkins. Osler vigorously protested Flexner's view that private practice by clinical professors jeopardized the quality of medical education. After all, he argued the clinical professor was a pro-

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59 Alan Chesney, The Johns Hopkins Hospital and the Johns Hopkins University School of Medicine: A Chronicle V. 3 (Baltimore: Johns Hopkins University Press, 1963), pp. 287-309; pp. 246-247.

fessional model for his young students to be emulated later in their careers. Caustically he posed the question which soon came at the imperturable Flexner from every side.

> Cabined, cribbed, confined within the four walls of a hospital practising the fugitive and cloistered virtues of a clinical monk, how shall he, forsooth, train men for a race the dust and heat of which he knows nothing and-this is a possibility!-cares less? [60]

Despite the fact that Flexner's critics grew in nimbers, he continued to hold sway at the General Education Board.[61] Heady with anticipation over the idea of restructuring the clinical years, the General Education Board resolved in January 1914 only "to aid medical education...insofar as it concerns the installation of full time clinical teaching." The experiment, under the direc-

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60 Ibid., pp. 176-186; pp. 128-160. See also Donald Fleming, "The Fulltime Controversy," Journal of Medical Education 30: 398-406 (1955). Fleming describes events

61 I Remember, pp. 177-184, 257-263. See also Raymond B. Fosdick, Adventure in Giving: The Story of the General Education Board (New York: Harper and Row, 1962), pp. 160-164.

tion of Abraham Flexner, was on in earnest. Between 1913 and 1919, the board, always acting on his advice, awarded over eight million dollars to schools agreeing to reorganize their clinical faculties. Washington University, Yale and the University of Chicago were among those that complied with Flexner's demands for strict adherence to the fulltime policy. Harvard, on the other hand, resisted and the secretary turned a deaf ear to their pleas for flexibility.[61]

In 1915, the Council on Medical Education, under Bevan's leadership, took a public stand in opposition to fulltime clinical medicine with the publication of a major report, "The Reorganization of Clinical Teaching." Although the idea for the report originated with Bevan and the council's members, it was written by a special committee of representatives from the nation's leading medical colleges including Rush, the University of Pennsylvania, Harvard, Washington University, Johns Hopkins, Columbia's College of Physicians and Surgeons, the Mayo Clinic, and the Faculty of Medicine in Montreal. It was chaired by Victor Vaughan of the

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[61] Ibid., Fosdick.

University of Michigan and a member of the Council on Medical Education. The strongest opposition to Flexner's plan came from Harvey Cushing of Harvard, who publicly threatened to resign should Harvard adopt fulltime clinical medicine. Although the committee expressed "sympathetic interest" in the Hopkins educational experiment, it concluded that:

> Opinion is by no means unanimous that the whole-time requirement is ideal, but even if it is ideal, such a requirement could not rationally be advised at present owing to the fact that so few of the medical schools are adequately financed to put it into effect.[63]

The committee was uncertain that even given adequate financial support whether fulltime was the best method of medical education. "Will the placing of clinical chairs on a full-time basis result," the report questioned, "in a gradual separation of medical teachers from perhaps some of the most vital problems of active medical practice?"[64]

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[63] Victor C. Vaughan, M.D., "Reorganization of Clinical Teaching," JAMA 64: 785-790 (March 6, 1915).

[64] Ibid.

Refusing to acknowledge the council's report, the opinion of men who spent their lives teaching medicine, Abraham Flexner, convinced that even though a layman he knew what was best for medical education, continued in his quest to impose fulltime clinical medicine on America's medical schools. Between 1913 and 1919, the board awarded over eight million dollars to medical schools which, like Johns Hopkins, agreed to reorganize their clinical faculties along the lines of strict fulltime medicine. Thanks to generous endowments from the General Education Board, fulltime clinical medicine became a fact of life in American medical education. However, Flexner's interpretation was neither quickly nor graciously accepted. Debates over the merits of fulltime medicine raged for nearly a decade in the nation's medical colleges. At issue was whether the clinical professor was first a medical practitioner or a scientist. Time would prove that he occupied a new and unique position in medical education and that, contrary to Flexner's insistance, he was, in fact, both practitioner and scientist.

Chapter V

Creating A Medical Center: Cincinnati's Municipal Hospital, New Setting, New Functions, 1909-1915.

In December 1909, Abraham Flexner visited the new Ohio-Miami Medical College of the University of Cincinnati to collect data for his report to the Carnegie Foundation for the Advancement of Teaching, Medical Education in the United States and Canada. The college, he noted after a thorough inspection, was in a state of transition. It had only recently been organized and its relationship to the city's new General Hospital had yet to be determined.[1] President Dabney was quick to let Flexner know that he intended to make Ohio-Miami a "scientific school of modern medicine of the best type." Besides providing well-equipped laboratories for the preclinical sciences, Dabney also meant to use the hospital's wards as laboratories where medical students could learn to diagnose and treat disease.[2] Flexner advised the presi-

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[1]Abraham Flexner, Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching (New York: Carnegie Foundation for the Advancement of Teaching, 1910), p. 283.

[2]Charles Wm. Dabney, "Report of the Ohio-Miami Medical College for 1909," Annual Reports of the City

dent that in order to make the hospital a truly effective teaching institution, it would be necessary for heads of departments in the medical college to have responsibility for their corresponding clinical services. Based on Dabney's plans for the future, Flexner gave the Ohio-Miami Medical College a favorable review in his report.[3]

The idea of expanding the role of the city hospital in medical education had been on Dabney's mind for some time. As early as 1905, he convinced both the Board of Medical Directors, which supervised the hospital, and the university's trustees to hire a pathologist to be in charge of both the hospital's burgeoning laboratories and the Medical College of Ohio's department of pathology. Dabney persuaded the Board of Trustees to pay the man's salary, an arrangement which gave the university a voice in the hospital's affairs, particularly regarding medical education. At the same time Dabney was anxious not to alarm the faculty of the Miami Medical College, many of whose members were on the hospital's staff and would object to any attempt by the Medical College of Ohio to

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of Cincinnati, 1909 (Cincinnati, 1910), pp. 1158-1159.

[3] Medical Education in the United States and Canada, p. 238

claim the hospital as its own. Therefore, he declared that the chair of pathology would be part of the university in general and not of the medical college. As a further step, he directed all courses in pathology to be taught at the hospital and opened to students from other medical colleges in the city. Despite the numerous advantages inherent in the scheme, not the least of which was the improved efficiency of the hospital's laboratories, the Miami faculty, suspicious of the president's motives, successfully blocked his way.[4]

Although defeated, Dabney nevertheless continued to seek an active alliance between the university's medical department and the municipal hospital. His colleague

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[4]On March 30, 1905, the medical staff of the Cincinnati Hospital resolved that if the university found a pathologist who was "satisfactory to the [medical] staff...the staff will recommend his appointment to the position of pathologist of the hospital..." Minutes of the Medical Staff, March 30, 1905. One month later, in the absence of C,A.L. Reed, who advocated the joint position, Dr. Dandridge of the Miami faculty proposed that such a step was "inexpedient" at the time. Minutes of the Medical Staff, April 27, 1905. On June 20, however, the Board of Medical Directors overruled the staff, resolving that "the University and the Hospital being allied institutions," the joint appointment in question should be filled. Still, however, Dabney was unable to overcome the opposition of the Miami faculty. See

and friend, Dr. Christian R. Holmes, whom he appointed professor of diseasses of the eye, ear, nose and throat in 1904, agreed that the hospital's many resources, including its wealth of clinical cases, diagnostic laboratories and postmortem examinations, should be made available for teaching. Moreover, like Dabney, Holmes believed that for medical teaching to be thorough and effective, the university and its medical department should have authority over the city hospital. Holmes was uniquely capable of assisting Dabney in achieving his goal. Besides his teaching duties and a large private practice, Holmes also headed the committee planning to build a new hospital for Cincinnati. Holmes had, in fact,

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Minutes of the Board of Medical Directors, June 20, 1905; Minutes of the Faculty of the Medical College of Ohio, Jan. 16, 1907 and Feb. 20, 1907 for discussions of the search for a pathologist.

For its part, the hospital staff appears to have felt the need for a professional pathologist who would give his fulltime to the department. In 1906 and 1907, the Board of Medical Directors wrote new rules regarding autopsies. See Minutes of the board, March 27, 1906, April 16, 1906, and Sept. 25, 1906. Minutes of the Medical Staff, Oct. 31, 1907 indicate that the laboratory had been reorganized to include subdepartments of histology, hematology bacteriology, and chemistry. It is clear from the extensive report that the work in each of these areas had grown significantly. Clearly pathology had taken on new importance in the hospital.

chosen the hospital's suburban hilltop site, not far from the university and had personally selected its pavilion design.[5]

From the time of its purchase in 1904, the site for the hospital, twenty-seven acres bounded by Burnet and Goodman Aveenues in the avondale section of the city, became a subject of controversy. Critics, including Dr. John Withrow, a member of the Miami faculty, charged that the location was too far from the demographic center of the city, making it difficult if not altogether impossible for the poor, most of whom lived in downtown slums, to get to the hisstop location. How, detractors asked, could the municipal hospital fulfill its responsibilities to the impoverished masses, so far removed from the very populace it was supposed to serve.?[6]

In response, Holmes pointed out that it had been no easy task to find a tract of land large enough to accomodate

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5 Minutes of the Board of Hospital Commissioners, June 18, 1904; Oct. 18, 1904; Nov. 25, 1904. At each of these meetings, the commissioners discussed the hospital's design and overall cost. At the time, Holmes was president of the board.

6 Martin Fischer, Christian R. Holmes, Man and Physician (Springfield, Ill., 1937), pp. 34-43.

a large modern hospital and to allow sufficient space for future additions. The site was not only spacious enough, but it also fulfilled all requirements concerning elevation, soil composition, drainage and, as an added advantage, was free from the noise and the smoke of the city. Holmes further defended his choice pointing out that other insittutions also found the suburban area attractive. Jewish Hospital and the zoo were both in the immediate vicinity. The university, German Deaconess Hospital and Good Samaritan Hospital were located nearby. General Hospital, he argued, would add to this "grand galaxy of public buildings" perched above the city.[7]

Aside from practical considerations, Holmes disputed his critics'a assumption that the city hospital existed exclusively to care for the sick poor. Rather,, he explained, articulating his concept of a medical center, the public hospital ought to be conducted for the good of the entire community. Holmes envisioned a community extending beyond the municipal boundaries of Cincinnati to the surrounding region. "We have," he noted, "tributary to us thousands of square miles of the most fer-

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[7]Christian R. Holmes, M.D., "Modern Hospitals: With Special Reference to our New Municipal Hospital and its Relation to Medical Education in Cincinnati," lecture, Cincinnati, 1908, pp. 2-8. Special Collections, University of Cincinnati Library.

tile farming land in the world, through which are scattered scores of smaller cities, towns, and villages whose inhabitants regard Cincinnati as their local metropolis." And, just as Cincinnati occupied the center of a geographical region, Holmes argued that the municipal hospital should occupy a position at the center of the city, equally accessible to all of the people, shining like a beacon of scientific enlightenment to the hinterland beyond.[8]

Promising that its reputation would "redound" to the honor and glory of Cincinnati, Holmes elaborated the hospital's new role as a medical center and its responsibilities to the region it served. Besides caring for the sick, Holmes argued that it should educate doctors to serve in society. Explaining the necessity for clinical training in medical education, Holmes compared the hospital to a laboratory where students could learn the application of fundamental principles of medical science.[9]

Providing competent training in a modern well-equipped hospital was critical, not only to medical education,

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[8] Ibid., pp. 7-8.

[9] Ibid., pp. 9-10.

but, Holmes insisted, to Cincinnati's future as a medical center. The fact was, he pointed out, that twenty years had passed since Cincinnati was known as a center of medical education. Quite simply, the city had failed to keep pace with Chicago, New York and other metropolises building teaching hospitals. To remedy the situation, Cincinnati's new General Hospital should become an adjunct to the Ohio-Miami Medical College. To bring this about, Hlmes recommended that the medical college move to the hospital's immediate neighborhood.[10]

Even as Holmes spoke in 1908, President Dabney once again attempted to bring about a closer affiliation between the university's medical department and the Cincinnati Hospital. That spring, as he felt increasingly confident of the possibility of merger, the president for the second time obtained permission from the university's trustees to look for a candidate for pathologist, who as the hospital's Board of Medical Directors earlier agreed, would work both for the city hospital and the university. Already the Ohio medical faculty

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10 Ibid., pp. 13-16. Two recent and excellent histories of hospitals are: Morris Vogel, The Invention of the Modern Hospital, Boston, 1870-1930 (Chicago; University of Chicago Press, 1980) and, David Rosner, A Once Charitable Enterprise: Hospitals and Health Care in Brooklyn and New York, 1885-1919 (New York: Cambridge University Press, 1982).

had raised $8,000 to support the position and half of that was earmarked for the first year's salary.[11]

In September 1909, Dabney announced that Dr. Paul Woolley, a graduate of Johns Hopkins Medical School and former professor of pathology at the University of Nebraska, had agreed to accept the position and fill what the president now described as the "central chair" of the Ohio-Miami Medical College. Earlier in his career, Woolley served with the United States government in the Philippines where he became an expert on tropical diseases and even served as medical advisor to the King of Siam. Woolley accepted the post of pathologist at the University of Cincinnati only on the condition that the hospital also appoint a fulltime bacteriologist to divide his time between laboratory work and teaching medical students. It is not unlikely that Woolley made his demand after conferring with Dabney who was determined to provide

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[11]It appears that as soon as Dabney was able to see that he could merge the two medical schools in the spring of 1908, he once again initiated steps to bring about the joint appointment. For evidence, see Minutes of the Board of Medical Directors, March 6, 1908 and Minutes of the Ohio Faculty, March 25, 1908 as well as Minutes of the Board of Medical Directors, March 30, 1908.

fulltime science professors for the fledgling medical college.[12]

Both the hospital and the university quickly agreed to Woolley's condition and the pathologist set about persuading his friend, Dr. William Buchanan Wherry, who had served with him in Manilla, to accept the position of bacteriologist. At the time, Wherry, a graduate of the University of Chicago and Rush Medical College, was serving with the United States Public Health Service in San Francisco. Wherry was there in 1906 when a devastating earthquake and fires which followed destroyed much of the city. The situation was made all the worse by an outbreak of plague which authorities found impossible to control. Normally plague is transmitted by flea-infested rats. In this case, however, it was different. To his credit, Wherry made the startling discovery that ground squirrels carried the disease, a discovery which

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[12]Minutes of the Board of Medical Directors, Sept. 24, 1909. At that time Superintnedent Fehrenbatch advised the board that, in his opinion, it was illegal to use hospital funds to pay a pathologist who also had duties at the university. For the announcement of Woolley's and Wherry's appointments, see U.C. Board of Trustees Minutes, Sept. 7, 1909.

was critical in controlling the plague's spread.[13]

In addition to plague, Wherry also conducted important research on tularemia proving that man contracted the disease from infected wild animals, usually rabbits. Disease symptoms ranged from localized swelling to pneumonia and victims were debilitated for several weeks or even months. Wherry was one of several Americans working on the problem which was first described by George W. McCoy of the Public Health Service in 1911. McCoy called the causative organism, bacterium tularense, after Tulare County, California where it was discovered. The work of McCoy, Wherry, and others demonstrated that animals and man alike could suffer from the same diseases, an entirely new concept in medical research.[14]

Woolley and Wherry arrived in Cincinnati at the end of the summer of 1909, just as the Ohio-Miami Medical College was ready for its first year of operation.

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13 Martin Fischer, William B. Wherry, Bacteriologist (Baltimore: Charles C. Thomas, 1938), pp. 132-133. Wherry, the son of missionaries in India, was made professor of bacteriology in 1912. A year later, he recognized tularemia as a disease of rabbits and humans alike. For many years, he served on Cincinnati's Board of Health.

14 Ibid., Fischer, Wherry, pp. 187-188.

That year, Dabney acted as dean of the medical faculty. Then in 1910, he nominated Paul Woolley to the position, a distinct departure from traditional practice in Cincinnati, where deans were usually elected by the faculty from among the clinical professors and served, like their colleagues, without pay except for receiving a share of the surplus funds remaining at the end of the year. Woolley's appointment was significant. He was not elected by the faculty but was nominated by and directly responsible to Dabney and the university's trustees who in turn depended on Woolley as an employee of the university to carry out their policies for the medical college.[15]

Dabney's choice of Woolley as dean was calculated to strengthen the affiliation between the city hospital and the medical college. As dean, Woolley spoke for the medical faculty and the university at the hospital and was therefore in an excellent position to bring the two institutions closer together. In this Wolley was aided by

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15 U.C. Board of Trustees Minutes, Oct. 4, 1910.

by another factor as well; the Ohio-Miami faculty virtually monopolized positions on the medical staff at the Cincinnati Hospital.

Moreover, the hospital's Board of Medical Directors, composed of three physicians, was in open sympathy with the aims of Dabney and the medical faculty. In fact, Ohio-Miami was even represented on the board. Nathaniel Dandridge served in 1909[16] and was followed in 1910 and 1911 by Charles Bonifield, professor of gynecology.[17] As a symbol of its resolve to create a close working relationship with the medical school, the medical directors decided in 1910 that all future hospital publications should carry the additional name, "Medical Department of the University."[18]

Even in the face of an increasingly stronger defacto affiliation between the medical college and the hospital, DAbney, always a realist, frequently pointed out that

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16 Annual Reports of the City Departments of the City of Cincinnati, 1909, p. 595.

17 Annual Reports of the City Departments of the City of Cincinnati, 1910, p. 518. Annual Reports of the City Departments of the City of Cincinnati, 1911, p. 254.

18 Minutes of the Medical Staff of Cincinnati Hospital, May 26, 1910.

the medical faculty lacked authority for the institution and could at any time lose its teaching privileges there. As events proved, Dabney had good reason to be concerned.[19]

Two years after merger, Ohio-Miami's near monopoly of the Cincinnati Hospital was threatened by two factions, one composed of dissatisfied practicing physicians in the city, who for one reason or another had been excluded from prestigious staff positions, and a second, composed of eclectic physicians, who because of their sectarian beliefs, had never been allowed to practice in the city hospital. As the Ohio-Miami faculty closed its hold on the hospital, outside dissidents, who saw their chances of gaining admission to the staff slipping away for good, joined together in 1911 in an effort to stave off the inevitable.[20]

That very year, ninety-five students from the Eclectic Medical College in Cincinnati attended lectures and clinics at the hospital. Despite their large number, no member of the faculty was permitted to set foot in the institution.

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[19] Dabney, Report of Ohio-Miami Medical College, 1909, pp. 1158-1159.

[20] In Oct. 1906, the hospital staff was enlarged but Ransohoff, Rachford and others of the "old guard" carefully controlled admission to its ranks. Minutes of the Medical Staff, Oct. 25, 1906.

Consequently, students were forced to depend on members of the Ohio-Miami faculty for clinical instruction, which, the eclectics charged, was vastly inferior to that given the regular medical students.

The complaint was more than justified and was one of long standing. As early as 1907, the eclectic faculty complained that their students were excluded from bedside instruction at the hospital, while Ohio's and Miami's students frequently accompanied their professors on ward rounds. In an effort to resolve the complaint, Joseph Ransohoff suggested that all medical students, regardless of their college affiliation, be given instruction at the bedsied. The medical staff, however, resented the additional time consuming duties and in the end decided that staff members ought to be allowed to take their own students on the wards whenever and as often as they pleased. The situation which resulted was inequitable to say the least and the eclectic faculty remained angry but powerless to do anything about it. The hospital's written policy provided that all medical students who attended the clinical course paid the same amount for a ticket. Yet for the price of their ticket, Ohio and Miami

students were offered extra instruction at the bedside while the eclectic students were ignored.[21]

Finally in July 1909, John K. Scudder, secretary of the eclectic faculty, armed with irrefutable evidence of the unfair situation, lodged a formal complaint against Ohio-Miami with the hospital's medical directors. As proof, he pointed to a statement in the Ohio-Miami catalogue for 1909 which stated that every member of the senior class would serve a clinical clerkship at the Cincinnati Hospital. Such privileged treatment, Scudder railed, was a blatant violation of the long standing rule that the hospital was open to all medical students on an equal basis, regardless of their school. Angrily, Scudder insisted that if the medical staff intended to offer such experience to Ohio-Miami students, it must be extended to the eclectic students as well.[22]

Eager to soothe ruffled feelings, the medical directors, including Nathan P. Dandridge form Ohio-Miami, assured Scudder that it had not given the university's

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21 Medical Staff Minutes, Feb. 28, 1907 and March 28, 1907.

22 Minutes of the Board of Medical Directors, April 30, 1909.

medical faculty authority to offer clinical clerkships and hastened to add that "all students will be treated alike if a well-defined ward clinical course is established in the hospital."[23] The key words in the board's statement were, of course, "well-defined." And, so long as no policy existed, Ohio-Miami continued to include a description of senior clerkships at the city hospital in its annual announcements, a fact which the medical directors simply ignored.[24]

However, the eclectics, led by Scudder, were not easily put off and continued to press the issue, making their dissatisfaction known throughout the ranks of the local medical profession. Early in the spring of 1911, John C. Oliver, professor of medicine at Ohio-Miami, tried to settle the matter by asking members of the hospital's medical staff to assign all senior medical students to clerkships.[25] Staff members, however, remained opposed

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[23] Medical Staff Minutes, July 29, 1909.

[24] "The Cincinnati Hospital," University of Cincinnati Record, 1911-1912 (Cincinnati, 1912), p. 202.

[25] Medical Staff Minutes, March 23, 1911.

to spending the extra time required of them to teach eclectic students and refused Oliver's suggestion.[26] That fall, the imperturable Oliver tried again, this time requesting that hospital rules be amended to abolish all amphitheater lectures and instead to offer all medical students exactly the same type and amount of clinical teaching.[27] At the next meeting of the medical staff, Dean Woolley moved that members accept Oliver's plan, an action which by no means endeared Woolley to his faculty, many of whom opposed it. In the end, however, the medical staff acquiesced and decided on a course including two hours of bedside teaching each day plus one hour of lecture for all medical students.[28] Still, this was only a minimum requirement, one which allowed the medical faculty to continue offering supplementary instruction including clerkships to Ohio-Miami students.

Outraged and humiliated by the medical staff's actions, the eclectics sought and found allies in the

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[26] Ibid., April 8, 1911.

[27] Ibid., Sept. 20, 1911.

[28] Ibid., Sept. 28, 1911.

in the disgruntled practicing physicians who also wanted access to coveted positions on the medical staff of the city hospital. Dr. A. G. Kriedler, editor of the Lancet-Clinic, assumed the position of spokesman for the unified factions and claimed to speak for some seven hundred physicians, each of whom, he insisted, had a right to serve on the hospital's staff by virtue of the fact that, besides having the proper professional credentials, they were tax-payers. Ohio-Miami, Kriedler charged, looked upon the Cincinnati Hospital as an "exclusive perquisite...an adjunct to the medical school," when, in fact, there was no legal basis for such an assumption.[29]

Determined to break the medical faculty's hold on the city hospital, Kriedler called on Cincinnati's City Council to take action to safeguard the rights of the offended physicians.[30] Supporting Kriedler, City Council

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29 "Try to Break into Hospital: Outside Physicians Seek to Gain Positions As Internes Against Tradition," Cincinnati Commercial-Tribune, Oct. 23, 1911, p. 17. Also, "Correspondence: Medical Education in Cincinnati," Lancet-Clinic 106: 661-663 (Dec. 23, 1911). Also, "The Insurgent Movement in Cincinnati," Lancet-Clinic 107: 30-31 (Jan. 13, 1912).

30 Ibid., Try to Break..."

met on Nov. 27, 1911 and passed an ordinance imposing limits on the length of time any one physician could serve on the hospital's staff, a law which excluded C.A.L. Reed Joseph Ransohoff, John Oliver and many others from further activity in the hospital. At the ordinance's passage, near pandemonium broke out among the many opponents of the medical staff who had come seeking vindication.[31]

Unfortunately for the dissidents, their joy was short-lived. Mayor Louis Schwab, a physician who had served earlier on the Board of Medical Directors with Holmes, openly demonstrated his sympathy with the medical college by immediately vetoing the ordinance. He explained to the members of City Council that he thought it unwise to place arbitrary limits on the length of time any doctor could serve on the staff. Pointing out the considerable loss of talent and experience the hospital would suffer if City Council had its way, Schwab suggested that the municipal hospital ought not to be subject

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[31] Minutes of Cincinnati City Council, Nov. 27, 1911.

to the whims of politicians.[32]

Now it was the medical staff's turn to relish victory. In a public resolution, staff members brashly voiced their appreciation not to Schwab but to City Council for its "recent prompt and decisive action in maintaining the position of the Cincinnati Hospital as a means for medical education and thereby maintaining the status of medical education in the University of Cincinnati."[33] While the medical staff gloated, Holmes

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32 Letter, Louis Schwab to City Council, Dec. 1, 1911. Contained in City Council Minutes, Dec. 4, 1901.

33 "Tenure of Staff Physicians of Hospital Limited to Fifteen Years," Cincinnati Enquirer, Nov. 28, 1911. Christian R. Holmes Scrapbook, Special Collections, University of Cincinnati Libraries. Also, Medical Staff Minutes, Nov. 29, 1911 and Fischer, Holmes, pp. 59-60.

In Dec., the Lancet-Clinic quoted an unnamed Ohio-Miami professor, who boasted that the Eclectic Medical College's days were now numbered. Its closing, he explained, seemed inevitable in the face of a recent call by the A.M.A.'s Council on Medical Education that bedside instruction should take place in a public hospital of no fewer than 200 beds. The council urged state boards to adopt this requirement. Should Ohio do so, the Eclectic College would be in trouble since its faculty could not provide such instruction. See, An Outline of the Essentials of a Satisfactory Medical College, Council of Medical Education (Chicago, 1910), p. 6.

prepared to deliver one final blow to the opposition.

In an effort to discourage further attmepts by his foes to challenge the medical faculty's hegemony at the hospital, Holmes managed to gain control of the Lancet-Clinic, the voice of the dissidents. Backed by the fortunes of his wife, Bette Fleischmann, and financial support from the medical faculty, Holmes purchased the journal in April 1912. Soon after, he appointed Charles Castle, who was virtually unknown in medical affairs in Cincinnati, to replace Kriedler as editor. Castle was advised by an editorial board composed exclusively of Ohio-Miami faculty, including C.A.L. Reed, Martin Fischer, head of the physiology department, and Mark Brown, associate professor of medicine. Now, Kriedler fumed, Holmes and his allies had a "double-nelson strangle-hold on the city hospital, the Academy of Medicine [and] the Lancet-Clinic. Unless you are in this ring," he advised Cincinnati's physicians, "you have no chance at anything medical in Cincinnati for it is the most perfect trust the world has ever known..." Under Holmes' direction, the Lancet-Clinic became the official organ of the Ohio-Miami Medical College informing the local medical profession of the college's

progress, philosphy, and its plans for future growth.[34]

Although Holmes had effectively silenced the opposition, the problem of how appointments should be made to the hospital's medical staff continued to haunt Holmes and Dabney, who remained uneasy over the prospect of future threats to the medical college's defacto control of the city hospital. In an attempt to solve the problem, Joseph Ransohoff suggested in Feb. 1912, that the hospital's rules be amended to give the university's trustees the right to nominate physicians to fill vacancies as they occurred on the staff. However, the medical staff defeated Ransohoff's plan in favor of a more radical one devised by John C. Oliver, who argued that the medical staff ought to formulate an entirely new set of rules allowing for total self-government rather than to deal piecemeal with the issue of nominations. Immediately a

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See "The Insurgent Movement in Cincinnati" and Fischer, Holmes, pp. 140-141. For example, in Dec. 1912, the Lancet-Clinic printed the "Annual Report of the Faculty of Medicine of the University of Cincinnati." (Lancet-Clinic 108: 691-692). An article earlier that year, "Cincinnati as a Center of Medical Education," gave details of the college's progress, praising the faculty for [illegible] at the hospital without pay. The article called on the city to provide the college with proper teaching facilities at the new General Hospital. (Lancet-Clinic 108: 83-84 (July 27, 1912).

committee, chaired by Ransohoff, set to work to draft new by-laws for the hospital's medical staff.[35]

However, Denis F. Cash, the city's safety director who held ultimate authority for the hospital was in sympathy with the dissidents who had suffered defeat. He overtly supported the argument that any licensed physician in Hamilton County ought to be eligible for membership on the hospital's staff. Nevertheless, cognizant of the medical staff's power and influence, Cash agreed that it should review all applications for staff membership and select three candidates, the final decision being left to Cash. In this way, the safety director hoped to satisfy both the medical staff and its opponents.[36]

Unwilling to compromise to the extent that Cash wanted, the Board of Medical Directors proposed a plan in

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35 Medical Staff Minutes, Feb. 29, 1912. In 1909, the city's safety director assumed responsibility for the hospital. The first man in this post, appointed by the mayor, was Scott Small with whom Holmes got along very well. See Fischer, Holmes, pp. 62-63.

36 "Places on City Hospital Staff Will Be Open to All Doctors Under Plan Proposed by Safety Director Case," Cincinnati Enquirer, Nov. 1, 1912, p. 14.

Dec. 1913 which also provided for access to the medical staff by newcomers. At the time, the hospital's staff was composed of thirty-three junior and a like number of senior positions. The plan provided that vacancies among the senior staff would be filled by junior physicians, nominated and voted upon by those whose length of service entitled them to the rank of senior physician. Any openings occurring on the junior staff were left to the seniors to fill by nomination, the final selection being the safety director's decision. In this way, the medical staff could deny their opponents' charges that it was all but impossible for an outsider to gain admission to the staff. Cash, whose authority the medical directors carefully acknowledged, endoresed the plan, bringing an end, he hoped, to the controversy.[37]

Despite the fact that the medical staff once again had its way, President Dabney knew full well that rules and regulations could easily be changed and that the medical faculty had the upper hand only so long as it enjoyed

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[37] Medical Staff Minutes, Dec. 18, 1913. The reorganization took months to work out. See plans presented in minutes of March 28, 1912 and April 25, 1912.

Cash's favor. Therefore, Dabney continued his efforts to bring about a permanent organic relationship between the hospital and the medical college. His opportunity came in July 1913, when the citizens of Cincinnati elected a fifteen man commission charged with writing a charter for the city. Supporters of the charter idea claimed that Cincinnati lagged behind other Ohio cities like Columbus, Dayton and Toledo, all of which had already achieved home rule, a favorite cause of the progressives, who saw this as the only way in which cities could be free to act in their own best interests.[38]

Among others, the charter commission included Dr. Samuel Iglauer, a member of the Ohio-Miami faculty, who Dabney felt sure, could convince his colleagues of the necessity for the university to control the municipal hospital. After all, the commission's members were primarily interested in making the city work more efficiently and should easily see the logic of joining the university and its teaching hospital together as a unit to act for the ggood of all the people through medical care and the professional education of physicians.

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38 "Crushing Defeat for Bigelow..." Cincinnati Enquirer, July 31, 1914. Charter Scrapbook, 1914, Special Collections, Hamilton County Public Library.

Optimistically, Dabney invited Abraham Flexner, who in 1911 was appointed secretary to the General Education Board, to come to Cincinnati and address the commission. Its members, he told Flexner, needed guidance from a recognized expert on medical education as to the exact nature of the relationship which should unite the university's medical college and the city hospital.[39]

In his letter, Dabney clearly indicated to Flexner that the secretary could count on his support regarding the issue of fulltime clinical medicine. "One thing that I desire very much to accomplish at an early date," he assured Flexner, "is to put paid whole-time men in charge

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39 Letter, Charles Dabney to Abraham Flexner, July 14, 1913, General Education Board Papers, Box 706. Dabney failed to point out that beginning in 1912, the medical college began receiving funds from the city along with the rest of the university. The Lancet-Clinic noted that the funds would help support seven or eight men in charge of the hospital's laboratory and instructors in anatomy, physiology, chemistry and pathology. The article went on to say that nine-tenths of the work done at the hospital, Board of Health, and college dispensary was done by the faculty without pay. The least the city could do was provide proper facilities. The title of the article, "Cincinnati As A Center of Medical Education," was a new theme the college was starting to promote. See Lancet-Clinic 108: 83-84 (July 27, 1912).

of the medical and other chief clinical professorships in the hospital and the medical college."[40] Dabney's remarks regarding fulltime medicine, Flexner's chief interest, were calculated to impress the powerful secretary with the quality of his plans for the medical college. In reality, whether or not fulltime professors practiced medicine on the side was of little consequence to Dabney. After all, Cincinnati could never even hope to experiment with full-time medicine without an endowment similar to the ones awarded to Johns Hopkins and other medical colleges by the General Education Board. Moreover, Dabney, who had just recently managed to merge the city's two regular medical schools, had no intentions of creating new divisions among the medical faculty with a futile debate over the advantages and disadvantages of fulltime medicine. Dabney simply wanted Flexner to help him convince both the charter commission and the public at large of the cogency of the university's claim for authority over the city hospital.

Due to more pressing engagements, Flexner was unable to accept Dabney's invitation. In his place, the president

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40 Ibid., Dabney to Flexner.

invited Winford H. Smith, superintendent of the Johns Hopkins Hospital. Smith, who was particularly knowledgeable about the role of the teaching hospital, agreed to come to Cincinnati in the fall of 1913. A large crowd, including Safety Director Cash, attended Smith's speech on "Municipal Hospitals-Their Importance and Their Management." They were pleased to hear his frank acknowledgement that the new General Hospital, under construction in Avondale, was among the most modern facilities in the nation and an ideal setting for the teaching of scientific medicine. However, he warned sternly, Cincinnati's expectation of becoming "the greatest medical teaching center in the West," depended entirely on the relationship between the university and the hospital as defined in the city charter. It was essential, Smith stressed, that the university alone control the hospital and that the hospital's medical staff be reorganized so that the heads of clinical departments in the medical college would assume responsibility for their respective services in the hospital. Only in this way, he concluded, could the medical college make the fullest and most efficient use of the hospital.[41]

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[41] Winford H. Smith, "Municipal Hospitals-Their Impor-

Shortly after Smith's talk and months before the charter election, Christian R. Holmes replaced Paul Woolley as dean of the medical faculty. As dean, Woolley had encountered many problems and his tenure of office was, to say the least, unhappy. According to Martin Fischer, neither students nor faculty members liked Woolley. Fischer charged that the dean subscribed to lofty ideals but possessed very little practical sense. "He failed," Fischer wrote with scorn for a man he obviously disliked, "to catch the imagination and affection of his faculty. It did not like him; and he showed plainly that he did not like it." Finally, Woolley resigned in June 1913, telling Dabney, "The time has come when someone more prominent socially and with wider financial influence than I have, should become leader of the medical school."[42]

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tance and Their Management," Lancet-Clinic 110: 428-431 (Oct. 25, 1913). and 110: 454-457 (Nov. 1, 1913). Smith was in Cincinnati on the very day, Oct. 25, when the General Education Board made its generous grant to Johns Hopkins.

42 Fischer, Holmes, p. 123. Fischer went so far as to blame Woolley for a decline in enrollment from 191 in 1911 to 80 in 1913 and 64 the following year, a decline more fairly attributed to the increasing demands made on entering students. In 1909, the candidate needed only a state certificate. A year later, a college year of physics, biology and chemistry and a language was added.

Woolley's allusion to financial influence pointed to his own inability as a fundraiser. In order to survive, it was essential that Ohio-Miami obtain the endowments it thus far lacked even in the preclinical sciences.[43] Accepting Woolley's resignation, Dabney began to look for a successor, who would be, as the former dean advised, a socially prominent man, whose connections to the wealthy and influential were certain to benefit the college.

Dabney turned first to Benjamin K. Rachford, professor of pediatrics, a man who fit the president's criteria. Earlier, in 1909, upon Rachford's appeal, Mary Emery, widow of philanthropist Thomas Emery, established

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By 1914, two years of college work were necessary for admission to Ohio-Miami.

43 In 1909, salaried professors were appointed in anatomy, chemistry and physiology. However, none of the departments were yet endowed. Friends of the late Dr. Joseph Eichberg, a longtime member of the Miami faculty, raised $45,000 to endow, at least partially, the chair of physiology in his name. They planned to raise an additional $55,000. And $10,000 had been given by other "friends" of Ohio-Miami for initial expenses in the pathology department. See Letter, Dabney to Hill, Nov. 5, 1909, Minutes of the Ohio Medical Faculty, Nov. 5, 1909.

the Babies Milk Fund Association, an agency which provided safe milk for Cincinnati's poor children as well as support for well-child clinics ain the city. Mrs. Emery continued to be impressed with Rachford's work in pediatrics and in 1913, offered to endow the chair of pediatrics at the college of medicine. Rachford advised her instead to give the money, $125,000, to the department of pathology, the science which linked preclinical and clinical studies and whose endowment would benefit the entire medical college.[44] Appreciative of Rachford's selfless act and convinced of his ability to appraise the college's needs and guide its future, Dabney offered the pediatrician the dean's chair. Rachford, however, who had no desire to give up his large practice or his work with the Babies Milk Fund, declined the president's offer.[45]

Next, Dabney offered the position to Christian R. Holmes, who also refused out of fear for those

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44 Robert A. Lyon, Benjamin Knox Rachford (Cincinnati: Educational Horizons Publisher, Inc., 1972), p. 57.

45 Letter, Rachford to Dabney, June 9, 1913, Rachford Scrapbook, Robert A. Lyon Library, Department of Pediatrics, University of Cincinnati College of Medicine.

very faculty members, such as John Withrow and George Fackler, who earlier opposed his plans for General Hospital. Despite Dabney's assurances of the faculty's support, Holmes continued to be adamant in his refusal. Just as persistent, however, Dabney met with the medical faculty on Oct. 2, 1913 and urged its members to sign a petition pledging their support to Holmes.[46]

Dabney sent the faculty's pledge accompanied by a letter pressing Holmes to accept the position. "No one else can fill the place," he pleaded with Holmes, insisting that there was "no disharmony in the faculty... [only a] difference of opinion. With you at the head," he concluded, "Ohio-Miami can be made a great medical institution." Several days later, Holmes, thus convinced of the faculty's loyalty, assented, promising, "to help as much as lies in my power to give to Cincinnati the medical prestige that

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46 Fischer, Holmes, pp. 123-124. See also Katherine T. Barkley, "Christian R. Holmes and the Building of the 1915 Cincinnati General Hospital and the 1917 Medical College," unpublished manuscript, p. 7. History of Health Sciences Library, University of Cincinnati.

that she should and can possess if her citizens, but especially her medical profession, will present a united and determined front..."[47]

The following January, Holmes was installed as dean of the Ohio-Miami faculty, an occasion Dabney chose to instruct the medical profession and the public alike on the role which the new General Hospital should assume in the community. This time, Dabney invited William Henry Welch to speak at a banquet honoring Dean Holmes at the Hotel Sinton on the evening of Jan. 17. Welch spoke briefly but to the point. "The time has come," he told a large audience which included Cincinnati's most prominent citizens, "when hospitals must serve a far larger purpose in the community than they have in the past." In addition to its traditional role caring for the sick, the modern hospital, Welch argued, had an obligation as the primary locus of medical education, the place in which physicians would learn to diagnose and treat disease. Not only the ill, but the entire community would benefit from the hospital's role as adjunct to the medical college. But,

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47 Ibid., Fischer.

Welch hastened to add, the relationship must be permanent, defined and guaranteed in the city charter. Then, he promised, Cincinnati could take its place among the "chief educational and medical centers of our country."[48]

While still in Cincinnati, Welch conferred with Dabney and Holmes on specific provisions which should be included in the charter.[49] The final document, which was presented to voters, provided for a board of hospital commissioners to include the dean of the medical faculty, the city's director of social welfare as well as the chief health officer and four others, one nominated by the university's trustees and three appointed by the mayor.

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48 "Banquet In Honor of Dr. William Henry Welch and Visiting Delegates," Lancet-Clinic 111: 110-115 (Jan. 24, 1914). Others attending the banquet included Dr. John A. Witherspoon, president of the A.M.A. and a member of the Council on Medical Education and Arthur Dean Bevan, chairman of the council.

49 Letter, Dabney to Flexner, March 4, 1914, General Education Board Papers, Box 706.

According to the charter, the board of hospital commissioners was responsible for the supervision and management of all the city's hospitals, which included a tuberculosis sanatarium. For its part, the university's trustees obtained the right to direct both the medical work and the teaching at General Hospital. To the proposed charter's discredit, it was not at all clear where the authority of one and the responsibility of the other left off.[50]

Following Welch's visit, Dabney wrote to Flexner telling him that the charter commission had been totally cooperative, accepting his and Welch's advice completely. He was pleased with a provision enabling the university's trustees to make appointments to the medical staff. In addition, he told Flexner that the university would become "solely responsible" for the teaching in the hospital. The charter, Dabney told the secretary, ignoring its grey areas of authority, completely embraced the "doctrine of the teaching hospital."[51]

Regardless of Dabney's hard efforts and high expectations, the people of Cincinnati overwhelmingly defeated the proposed city charter. Arguments among voters centered

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50 Charter Commission, The Charter for the City of Cincinnati, July 14, 1914 (Cincinnati, 1914).

51 Letter, Dabney to Flexner, March 4, 1914.

on the issue of home rule itself, the non-partisan ballot and, more important, municipal control of public utilities. The university's control of the city hospital was a minor question to most people. To the disappointment of the charter's advocates, even endorsements by the Chamber of Commerce, the Central Labor Council, the Council of Social Agencies and other progressive organizations did not help. Cincinnati, it seemed, was not at all sure of the efficacy of home rule.[52]

Once again, to the dismay of Dabney and Holmes, the shadow of political interference fell over the city hospital. As preparations were made to abandon the old hospital at 12th and Plum Sts. in the fall of 1914, the medical staff pointedly reminded the people of Cincinnati that the city's hopes of becoming a leading medical center hung in the balance so long as the exact nature of the hospital's administration remained unclear.[53]

Then in November, to the medical faculty's consternation, City Council created a Civil Service Commission to

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[52] "Avalanche of 'Noes' Sweeps Down on Charter from All Parts of City," Commercial-Tribune, July 15, 1914, p. 1.

[53] Medical Staff Minutes, Oct. 29, 1914.

govern appointments to all city positions including those at General Hospital. Gustav Zinke, professor of obstetrics at Ohio-Miami, heatedly charged that under the commission, appointments to the hospital's staff would be politically influenced.

> This," he said, "is a dangerous condition of affairs, one, which may, at any moment, be of serious consequences to the Medical Department of the University. Under such circumstances harmonious work and the achievement of the best results in the study, teaching and practice of medicine and surgery are impossible.
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[54] "Noted Physician Discusses Plan for the Operation of New City Hospital," Commercial-Tribune, Nov. 15, 1914, Holmes Scrapbook. See also Gustav Zinke, M.D., "The New Cincinnati General Hospital," Lancet-Clinic 112: 530-534 (Nov. 14, 1914). Also, "A Teaching Hospital," Lancet-Clinic 113: 483 (May 1, 1915). The editor suggested that if Holmes had his way, General Hospital would become "one of the best clinical schools in the United States." Also, Charles E. Caldwell, "The Cincinnati General Hospital: What It Stands For," Lancet-Clinic 113: 486-489 (May 1, 1915). Caldwell, clinical professor of surgery, spoke before the Literary Club of Cincinnati and outlined the need of the city for the new hospital. It would, he insisted do more to advertise the city than anything since the completion of the Southern Railroad.

Luckily, Holmes, who was repeatedly frustrated by threats to the medical faculty's position in the hospital, found a way to strengthen the defacto union between the medical college and General Hospital. In May 1915, only three months after the hospital opened, Mary Emery offered Ohio-Miami a quarter of a million dollars to build a new college in the immediate vicinity of the hospital. "From you and other physicians of distinction," Mrs. Emery wrote to Holmes, "we have all learned that a well-designed and e equipped building near a good hospital is an essential for the proper performance of the functions of a medical school, and the needs of the Ohio-Miami Medical College in this regard." As a token of her confidence in Holmes, Mrs. Emery permitted the dean to dictate the terms of her donation. The contract stipulated that the building was to be erected on a lot of the medical faculty's choosing and was to be connected to the hospital, giving reality to a heretofore symbolic relationship. Also, Holmes and the medical faculty had complete freedom in selecting the college's design and responsibility for its construction. Not surprisingly, the new college was architecturally similar to the hospital, yet another indication of the bond uniting the two. Finally the contract provided that the manage-

ment and control of the college building should be vested exclusively in the medical faculty.[55]

Although happy with Mrs. Emery's latest contribution, the university's trustees nevertheless found the last condition of the contract, which vested the property in the medical faculty, particularly vexing, a return to earlier times when the medical faculty controlled its own affairs. Later, the board complained that it had "never been consulted about this building, it was not erected by the Board, has not been turned over to the Board, no statement has at any time been submitted to the Board of the cost of the building and equipment, and no budget estimate for its operation and maintenance has been made."[56] In the face of Holmes' refusal to reply, the trustees could do little more than register complaints about the medical dean's dictatorial ways. But even as they chaffed under his authoritarianism, the board's members recognized Holmes' total devotion to the

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[55] Minutes of the Board of Trustees, June 1, 1915; Oct. 2, 1917; and Nov. 6, 1917. Not until Nov., 1919 did Holmes finally turn the property over to the university with a list of donors.

[56] Ibid., Oct. 2, 1917.

highest ideals of medical education and continued to support his every effort.

As a complement to Mrs. Emery's gift, Dabney announced on June 26, 1915 that, at Holmes' urging, some fifty donors had given over thirty thousand dollars as a basis for putting the chair of medicine on the fulltime system of medicine. Holmes' and Dabney's choice of medicine as the first fulltime clinical chair depended on several factors. To many educators and practitioners alike, medicine was the chief among the departments. In fact, many small specialties had once been part of the department of medicine. More practically, Frederick Forchheimer, professor of medicine and dean at the Medical College of Ohio and later professor of medicine at Ohio-Miami, had recently died leaving the chair vacant. Holmes calculated that $150,000 would be needed to establish a permanent endowment. However, he encountered serious difficulties trying to raise such a large sum of money and therefore devised a scheme to solicit two hundred dollars annually from each of fifty contributors. Among others, Holmes' traditional supporters once again came to his aid, including Charles P. Taft,

Dr. Joseph Ransohoff and Holmes' brother-in-law, Julius Fleischmann.[57]

Just prior to the beginning of the fall term, Holmes nominated Roger Sylvester Morris, a native of Ann Arbor and a graduate of the University of Michigan, as head of the department of medicine. Morris had been associate professor of medicine both at the Johns Hopkins Medical School and at Washington University. In addition, he had studied abroad at the clinic of Frederich von Mueller in Munich and, at the time of his appointment, was director of medicine at the Clifton Springs Sanatarium in upstate New York.[58]

According to Morris' contract, he was responsible for all of the clinical teaching in medicine at General Hospital. However, Holmes also allowed him to conduct private consultations. In fact, shortly after Morris'

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57 Board of Trustees Minutes, June 30, 1915 and Nov. 2, 1915. See also Annual Announcement of the Ohio-Miami Medical College, 1917-1918 (Cincinnati, 1917), p. 9, for a list of contributors and the amount of each gift.

58 Richard W. Vilter, M.D. University of Cincinnati Department of Medicine, History of the Chairmen or, "They Had Their Troubles Too," (Cincinnati, privately published, 1977), pp. 22-26. Morris, who had manic-depressive tendencies, was frequently hospitalized leaving the administration of the department to Mark Brown, associate professor of medicine.

arrival in Cincinnati, Holmes, realizing that it would take considerable time for Morris to develop a private practice, increased his salary from $5,000 to $6,000 a year.[59]

Even before Morris' appointment, Holmes had made it perfectly clear that he favored allowing fulltime clinical professors to maintain their own practices.[60] Whether or not Abraham Flexner knew of Holmes' strong views on the subject of fulltime medicine is unknown. However, he certainly knew that Cincinnati was having problems raising sufficient funds to endow a clinical chair. Dabney wrote to the secretary informing him that some money had been obtained but added that "this about exhausts our people for the present."[61] For his part, Flexner made no financial commitment to the medical college.

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59 Board of Trustees Minutes, June 30, 1915 and Nov. 2, 1915.

60 Christian R. Holmes, M.D., "Hospitals and Their Relation to Medical Colleges and the Training of Interns," JAMA 62: 829-833 (March 14, 1914). Delivered before the Tenth Annual Conference of the A.M.A. Coincil on Medical Education, Feb. 24, 1914.

61 Letter, Dabney to Flexner, July 9, 1915, General Education Board Papers, Box 706.

Holmes' choice of Morris rested in part on Morris' research capabilities. Shortly after his arrival, he initiated research in the diseases of pericarditis and pernicious anemia. He also established a residency program in internal medicine for graduate physicians who wished to specialize in diseases of the heart, lungs and other major organs of the body. Morris was able to do so only because of the generosity of the dean's wife, Bette Fleischmann Holmes, who contributed $1,5000 each year for three years to support one resident physician and four associates, all of whom Morris appointed.[62]

Thus far, Holmes' goal of creating a medical center in Cincinnati was dependent on the support of his wife as well as other philanthropists in the city. He also had the cooperation of the medical faculty. For example, in 1916, when Holmes set out to reorganize the medical staff of the hospital so that heads of departments within the college were chiefs of their corresponding services in the hospital, several faculty members including C.A.L.

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62 Vilter, pp. 23-25. Fischer, Holmes, pp. 186-187. Board of Trustees Minutes, Oct. 3, 1916.

Reed, Gustav Zinke, and E.W. Mitchell, all resigned their hospital positions in order to ease the way for him. On his own then, Holmes worked to reinforce the connection between the medical college and the hospital.[63]

Finally in 1917, the people of Cincinnati, among whom there were few who still questioned the necessity for home rule, once again elected a commission to write a city charter. As far as the commission's members were concerned, the university's control of General Hospital was a fait accompli needing only to be endorsed by law. That fall, after a particularly low-keyed campaign, the city charter passed easily in Cincinnati.

According to provisions concerning General Hospital, which Holmes with the aid of Alfred Friedlander and Wm. B. Wherry had written, department heads were totally responsible for their respective hospital services. A directing medical staff, consisting of the superintendent, dean of the faculty and department heads, appointed members of the medical staff for approval by the university's trustees. Holmes and his committee also made certain

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63 Board of Trustees Minutes, Oct. 3, 1916.

that the appointment of the hospital's superintendent would not be subject to political influence by removing the position from the civil service list. Although nominated by the director of public safety, the superintendent was appointed by the directing medical staff.[64]

The powers granted to the university and the medical college by the 1917 charter were far broader than those of the defeated proposal three years earlier. The new charter, in contrast to the previous document, left absolutely no question as to who was in charge of the hospital. Fortunately for Holmes and Dabney, the earlier charter failed and in its place the people of Cincinnati passed one which guaranteed the future of General Hospital as a teaching hospital and medical center.

Now the two men began in earnest to court the favor of Abraham Flexner and the General Education Board in

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64 Charter, City of Cincinnati (Cincinnati, 1918), Sections Iv and V. See also, Fischer, Holmes, pp. 191-192. According to Fischer, Holmes told people that the Carnegie Foundation and the General Education Board would never do anything for the college until the hospital was "revamped." In Dec., 1917, City Council passed the neessary ordinance to make the department heads from the college chiefs of their hospital services.

hopes of obtaining an endowment for the Ohio-Miami Medical College which they had worked so hard to build. Writing to Flexner shortly after the charter's passage, Dabney made no secret of his anticipation of the board's support. "I hope you feel, he told the secretary, "that the citizens and I have met all your expectations and that we can count upon your active cooperation..."[65] Flexner, in reply, promised to come to Cincinnati the next fall to see for himself what Dabney and Holmes had achieved.[66]

Unfortunately, Flexner suffered from what proved to be an intractable leg ulcer and was confined to bed for most of the summer and late into the fall of 1917. Since Flexner could not see the new medical center for himself, Dabney and Holmes waged a determined campaign by mail to impress the secretary with their progress. In July, Dabney wrote to tell Flexner that the college was searching for an assistant dean, a person who, Dabney emphasized, "will devote his life to medical education."

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65 Letter, Holmes to Flexner, July 18, 1917, General Education Board Papers, Box 706.

66 Letter, Holmes to Flexner, Oct. 22, 1917, General Education Board Papers, Box 706. Here, the dean mentions that Flexner had been forced to cancel plans to visit Cincinnati as well as several western medical colleges.

The successful candidate would administer the school's educational affairs including the admission of students, class schedules and general operation of the laboratories, buildings, and clinics. Ideally a practitioner would be the best choice since the position dealt primarily with practical matters. Still, Dabney told Flexner, he and Holmes both realized that few practitioners were willing to give up a lucrative practice to settle for a much smaller academic salary. "We may," Dabney wrote, "have to take a man qualified in some one of the fundamental sciences who is competent to act as principal of a scientific institution." Whatever compromises they might be required to make, Dabney wanted Flexner to know that he and Holmes realized that the best choice was a medical practitioner and that medical schools no longer employed scientists to administer all the daily affairs.[67]

In the fall of 1917, Holmes wrote to Flexner inquiring about his health and asking about the possibility of a

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67 Letter, Dabney to Flexner, July 5, 1917, General Education Board Papers, Box 706.

visit from the secretary in the near future. The medical college building was about to open and the college was having an excellent year. "In spite of the war conditions and the non-exemption of premedical students," Holmes told Flexner exuberantly, "our Freshman Class is double what it was last year!"[68]

Flexner continued to be disabled and could only encourage Dabney and Holmes from a distance. Although he could not visit the college, he asked Dabney for details of its arrangement. Designed by the hospital's architects, Samuel Hannaford and Sons, the four story building looked like the ward pavilions except that it was larger. Shaped like the letter "E", the building contained administration offices and laboratories for preclinical sciences. It also featured a library, dining room, and an assembly hall which seated five hundred.[69]

Only two departments, pathology and bacteriology were not located in the college but in the Pathologi-

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[68] Letter, Holmes to Flexner, Oct. 22, 1917, General Education Board Papers, Box 706.

[69] For a detailed description of the anatomy department, see Henry McE. Knower, "The Anatomical Department, University of Cincinnati," Rockefeller Foundation, Methods and Problems of Medical Education 17th Series (New York: The Rockefeller Foundation, 1930).

cal Institute across the street and not because of any lack of space but rather because these two were clinical sciences inextricably bound with the daily practice of medicine. Dabney was particularly proud of the Pathological Institute which had a large amphitheater where students could observe autopsies, a museum, a photographic department, and modern laboratories even including facilities for experimental work with animals. Here, at the institute students became well aware of the importance of pathology in the everyday practice of medicine.

It was critical that the student extend his knowedge of pathology during his clinical years in the hospital. Yet, despite the fact that the medical college and hospital were a single unit, Morris remained the only fulltime clinical professor and Dabney and Holmes were convinced that a great deal of valuable experience and research material were lost for lack of a salaried clinical faculty.

The two therefore continued to press their case not only with Abraham Flexner but with Henry Pritchett as well. Late in the fall of 1918, Holmes visited Pritchett in New York. At that time, the foundation's president suggested that the centennial of the Medical College of Ohio might be an ideal occasion for raising a large endowment for the medical college. He also told Holmes

that financial aid from both the Carnegie Foundation and the General Education Board might materialize in the near future.[70]

Holmes, however, heard nothing from Flexner and revealed his disappointment to the secretary in June 1919. "We have hoped for sometime to receive some recognition and help from the Rockefeller Foundation (sic)," he wrote in dismay, "and I am writing this to ask whether it will not be possible for you to bring about a gift for the Centennial Celebration." Holmes implied that a negative answer from Flexner might imperil the very future of the medical college. He told the secretary in no uncertain terms that Mary Emery was waiting to see what the two foundations intended to do before she gave any additional money to the college. Boldly, Holmes suggested that the Carnegie Foundation and the General Education Board each give half a million dollars to be matched by a million dollars raised in Cincinnati.[71] Much to the dean's relief, Flexner replied that he was "extremely anxious to

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70 Letter, Holmes to Flexner, Jan. 9, 1919, General Education Board Papers, Box 706.

71 Letter, Holmes to Flexner, June 28, 1919, General Education Board Papers, Box 706.

carry out this long deferred project, and I see no reason now why I should not be able to do it in the course of the coming fall."[72]

Exactly what Flexner meant to do for Cincinnati, he did not say. Up until December 1919, fulltime medicine was the only project which the General Education Board supported in medical education. Whether Ohio-Miami would have been considered a candidate for the experiment in strict fulltime is unknown. Furthermore, whether or not Dabney and Holmes would have accepted a grant under terms imposing strict compliance is equally unclear.

There is, however, no question that as early as 1905, when Dabney sought to link the city hospital and the university's medical department through the joint appointment of a pathologist, Dabney had set out to make Cincinnati one of the nation's leading medical centers. By 1920 Dabney and Holmes had enjoyed a good deal of success. Three years earlier, they had finally managed to unite General Hospital and the Ohio-Miami Medical College under the university's jurisdiction. Repeatedly, in the building of the medical college and the endowment of preclini-

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72 Letter, Flexner to Holmes, July 9, 1919, General Education Board Papers, Box 706.

cal and clinical chairs, local philanthropists had displayed civic pride in the project. Now in 1920, Dabney and Holmes awaited recognition by a national foundation that Cincinnati had indeed created a medical center worthy of an endowment. However, Cincinnati's will to accept all that Flexner was to dictate in the name of modern medical education had yet to be tested. Furthermore, the debate over fulltime clinical medicine and the reorganization of the medical faculty and staff of the General Hospital remained to be settled.

Chapter VI

Abraham Flexner's Philanthropy: The Fulltime System In the Department of Surgery at the University of Cincinnati College of Medicine, 1910-1930.

Flexner's opportunity to help his friends in Cincinnati came in the fall of 1919, when John D. Rockefeller, Sr. gave the first in a series of gifts which eventually amounted to over fifty million dollars to be used for the advancement of medical education in the United States. Flexner himself sparked the philanthropist's generosity with his proposal for a new and broader program to aid a greater number of medical schools which he submitted to Rockefeller in the spring of 1919.[1] He argued that, although medical science had progressed with "remarkable rapidity," those advances had simply not been incorporated at most medical schools. Consequently, the majority of practitioners continued to remain in the dark ages, ignorant of the wonders of scientific medicine. The remedy, he suggested, was simply to replace the local practitioner teachers with professors knowledgeable in the

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[1] Abraham Flexner, I Remember (New York: Simon and Schuster, 1940), pp. 277-279.

ways of science. "We know how medical schools and hospitals ought to be organized," he told Reockefeller. Thanks to schools like Johns Hopkins, there was an adequate supply of competent research oriented teachers. Now, the time was ripe "for an organized and progressive effort to bring medical education throughout the United States to the level made possible by the recent progress of medical science."[2]

The best way to accomplish this, Flexner suggested, was to improve thirty-one medical schools already existing in cities in various sections of the United States. For example, among the Northern Central States, the opportunities in Cincinnati, Columbus, Cleveland, Chicago, and Indianapolis were already "definite and assured." The University of Cincinnati College of Medicine was one of six or eight schools in the country "already in [a] position to give solid medical training in keeping with modern ideals...[but] in urgent need of additional resources."[3]

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[2] Abraham Flexner, "Medical Education in the United States: A Program," General Education Board Papers, Box 702.

[3] Ibid., pp. 4-5.

Flexner's suggestion that the General Education Board should aid public institutions infuriated Frederick Gates, a member of the board and Mr. Rockefeller's personal advisor. Flexner incited Gate's wrath with a proposal to aid the University of Iowa. What ensued was "one of the stormiest meetings of any of the Rockefeller boards," during which Gates railed against the proposal. State universities, he argued, were "creations of politics, subject to the whims of uneducated legislatures. It would be," he continued, "against public policy for a cent of Mr. Rockefeller's money to be given to them." Instead Gates advocated a "cordon of strong, free, privately endowed colleges and universities," free of political entanglements. Just as determined, Flexner urged the board to develop "a high grade system of education in the United States." If, he argued, we confine our efforts to private and already endowed institutions, we can expect to operate only in the East. By endowing state and municipal institutions, Flexner sought to achieve "wholesome competition" among medical colleges across the country, both public and private.[4]

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[4] Raymond B. Fosdick, Adventure in Giving: The Story of the General Education Board (New York: Harper and Row, 1962), pp. 166-167. Also, I Remember, pp. 293-295.

Flexner's argument carried the day but not without serious recriminations. Gates, described by one observer as "an old lion at bay," never forgave the secretary for what he considered treachery against the board's philosophy. Shortly after that, Gates resigned from the board's executive committee, complining bitterly about "bureaucratic officers, usurping the power of the Board."[5]

The ramifications of Flexner's new policy were no less than astounding. Flexner, who had till now tolerated nothing less than absolute compliance with his wishes, could not hope to dictate to states, cities and other philanthropists as he had to Johns Hopkins and other General Education Board endowed schools. Ever astute, Flexner realized that while his influence would be great, he could not continue to operate by simple fiat as before. He would simply have to allow more flexibility in fulltime medicine. To protect the fulltime system where it was already established, the wily secretary never openly admitted to any change of policy and continued to speak of fulltime in traditional "flexnerian" terms. His actions, however, belied his policy statements. In effect, Flexner's earlier concern that clinical research was somehow sullied by the

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5 Gates quoted by Fosdick, p. 167.

hands of a fee-collecting professor, was now replaced by the problem of introducing scientists to the faculties of America's medical schools.

In December 1919, the General Education Board met to set a policy regarding the dispersement of Mr. Rockefeller's latest gift. Speaking in a firm tone, one which suggests that Flexner wrote the memorandum, the board declared that "there is no other educational field in which we are as clear as we are in the field of medical education with respect to what is needed and what can be and should be accomplished." Signalling its intention to be more flexible in the future, the board noted that educational, financial and social conditions in the country were far too diverse to "proceed immediately to the universal realization of an ideal type of medical school." Therefore, the new fund would go for the "immediate improvement, rather than the immediate standardization of medical education in the United States." Acting on Flexner's suggestion, the board declared its intention "to cooperate with state or municipal, as well as endowed institutions."[6]

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[6] "Memorandum Regarding Mr. Rockefeller's Gift To Be Devoted to the Improvement of Medical Education in the United States," no author, Dec. 1919, General Education Board Papers, Box 702.

Flexner's interest in the University of Cincinnati derived from the very fact that it was a municipal institution. The city was unique in owning both a university and a medical college. Flexner hoped that Cincinnati might serve as a model for other cities to build medical centers. "Would it not be a superb object lesson to municipalities throughout the country," he asked, "if this city hospital could be organized as a real university clinic?"[7] By the late teens, the college had a modern new building and hospital. In addition, sentiment among college officials favored the creation of a research oriented faculty. Early in the winter of 1919, Dean Holmes wrote to Flexner expressing his hope that the General Education Board might soon come to the school's aid. The dean had exhausted local resources. "We should have full time men in Surgery and Obstetrics," he appealed to Flexner, "...Please come to the rescue and help to put us on a firm foundation."[8] In July, Flexner answered

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[7] "Memorandum RE University of Cincinnati Medical School, Cincinnati, Ohio," General Education Board Papers, Box 706.

[8] Letter, Holmes to Flexner, Jan. 9, 1919, General Education Board Papers, Box 706.

that he hoped to be able to help the medical college in the near future.[9]

However, before Flexner could act, Christian R. Holmes died in January 1920. Even as he lay dying, Holmes pleaded with the people of Cincinnati not to abandon his project of creating a great medical center in Cincinnati.

> A great work is left unfinished and upon you devolves the responsibility and privilege of carrying it on to full fruition. It has been my cherished thought that here in the Valley of the Ohio, on the towering hills of our beloved city, there shall arise the world's greatest institution for healing the ills of humanity.[10]

Persuasively, Holmes announced that both the Rockefeller and Carnegie Foundations "have exhibited a lively interest" in the project. First, however, he warned, the people of Cincinnati would have to "exhibit a firm purpose" by establishing a "permanent endowment of majes-

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[9] Letter, Flexner to Holmes, July 9, 1919, General Education Board Papers, Box 706.

[10] Board of Trustees Minutes, Jan. 16, 1920.

tic proportion" before they could expect financial help from the two foundations.[11]

Dean Holmes' death left a critical void in the medical college's leadership. To make matters worse, soon after Holmes' death, President Dabney announced his plans to retire. Flexner knew full well the plans these two had for developing the school. He was not so sure of their successors' intentions. In the absence of strong leadership,he was worried that part time faculty members, who treasured their tenure and prestigious staff positions at General Hospital, would successfully resist the implementation of the fulltime system of medicine in clinical areas.

Although financial assistance from the General Education Board was not so quickly forthcoming, the Carnegie Foundation took action shortly after Dean Holmes' death. On January 16, 1920, President Dabney received a telegram from Elihu Root, chairman of the Carnegie Corporation. "At a meeting held yesterday morning," Root announced, "$250,000 was appropriated for the Medical

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[11] Ibid., Shortly after the dean's death, plans were made to launch a campaign to raise one million dollars for the medical college. See, "Million Dollar Research Fund as a Memorial," Newspaper clipping, no source, Jan. 12, 1920, Christian R. Holmes Scrapbook, Special Collections University of Cincinnati Libraries.

Department of the University of Cincinnati to endow a chair in memory of Dr. Christian R. Holmes, and to bear his name. This action," he concluded, "is taken in recogntion of Dr. Holmes' great service to medical education."[12] The endowment was made without any conditions and as such represented a departure from the foundation's normal procedure. However, Henry Pritchett was quick to note that, "it does not establish a precedent which will embarrass us. The work which Dr. Holmes did stands alone. It deserves to be recognized in a wholly unusual way."[13] The endowment of another fulltime clinical chair was a fitting memorial to Holmes and an added incentive to the medical faculty and the city to complete his work.

Not so willing to commit himself to a large expenditure, Flexner preferred to wait and see for himself just how President Hicks, Dabney's successor, would carry out the reorganization of the clinical faculty. In late

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12 "Carnegie Corporation Establishes A Chair at Medical College," University News, Jan. 21, 1920, Holmes Scrapbook.

13 "Cincinnati to be Heart and Home of Medical Research through Dr. Holmes' Memorial," Cincinnati Times-Star, no date, Holmes Scrapbook.

January, Flexner visited the University of Cincinnati College of Medicine. Upon his return to New York, he reported to the General Education Board that "sound clinical organization" existed only in the department of medicine. Elsewhere teaching was done by part-time practitioners who had little if any interest in research.[14] However, President Hicks and the medical faculty tried to convince Flexner of their willingness to go along with previously agreed upon plans to reorganize the college. For example, William B. Wherry pleaded that additional funds were needed in order to make the teaching "more efficient and release time for all for study and research work." He noted "a relative scarcity of sufficiently well-trained men in the clinical group" and suggested the creation of departments of experimental medicine and surgery, a suggestion sure to appeal to Flexner.[15]

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[14] "Memorandum RE University of Cincinnati..."

[15] Memorandum, Wm. B. Wherry to Charles Dabney, Jan. 26, 1920, pp. 1-3, General Education Board Papers, Box 706.

The degree of cooperation Flexner could expect from the university's trustees was another matter. He was especially uneasy when the board, anxious to preserve its perogatives, only narrowly accepted terms set by Mrs. Holmes to endow the dean's chair. Flexner himself had advised Mrs. Holmes that the dean ought to be chosen by the university's president and approved by the board.[16] Judge Rufus Smith, the powerful president of the board, candidly admitted to Flexner that he considered the terms a dangerous precedent and had voted against acceptance.[17]

In a widely publicized quote in May 1920, Flexner challenged the board of trustees to decide the college's fate. Calling the medical college, "a faculty run institution which would...die of dry rot," he charged that the

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16 Letters, Judge Rufus Smith to Flexner, April 20, 1920; Flexner to Smith, April 30, 1920; Smith to Flexner, June 8, 1920; telegram, Mrs. Holmes to Flexner, June 8, 1920. There is also an interesting letter from Flexner to Smith, June 10, 1920 in which the secretary denied that he dictated terms to anyone. All of the above contained in General Education Board Papers, Box 706.

17 Letter, Smith to Flexner, June 8, 1920.

faculty consistently made decisions with little or no regard for the trustees' wishes.[18] He made perfectly clear the basis on which the board could strike a bargain with the General Education Board.

> If the officials of the Ohio-Miami Medical College want to make their school a national institution and Cincinnati a medical center of the Middle West," he charged, "the Rockefeller Foundation (sic) is interested in the project and will aid the college. If [on the other hand] the Ohio-Miami is to be merely a local school which offers local physicians an opportunity to teach and practice medicine, the Rockefeller Foundation (sic) is not interested.[19]

Now, the trustees, eager to receive a grant and led by Judge Smith, began to court Flexner's favor. Cincinnati's newspapers reported that a "shake-up" was expected at the

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[18] "Three Department Heads to be Released in Reorganization of Ohio Medical College," Cincinnati Enquirer, May 2, 1920, Holmes Scrapbook.

[19] Ibid. See also "Report that College Will Be Reorganized," Cincinnati Times-Star, May 3, 1920; and "Changes at U.C.," Cincinnati Post, May 3, 1920. All in Holmes Scrapbook.

medical college. They named key faculty members, among them Dr. Joseph Ransohoff, then close to retirement, who would be asked to step down.[20] Although furious that conditions set in private had been made public, Smith could do little else than admit grudgingly that, "we all know that a definite program has been adopted in sympathy with the Rockefeller Foundation (sic) plan."[21]

Also anxious for a grant from the General Education Board, President Hicks wooed the secretary seeking his advice on a proper successor to Dean Holmes. Hicks finally settled on Col. Henry Page, a man of known administrative ability and who, although not of Flexner's acquaintance, was willing to reorganize the college along lines acceptable to Flexner.[22] Finally, at the end of November with all conditions met and after numerous conferences between Flexner and university officials, the long awaited announcement was made that the General Education Board would award the University of Cincinnati College of Medicine a grant of $700,000 toward an en-

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20 "Three Department Heads to be Released."

21 "Sanction is Given by Board to Reorganization of Ohio-Miami Staff: Rockefeller Foundation (sic) Plan Followed," no source, May 7, 1920, Holmes Scrapbook.

22 Letter, President Hicks to Flexner, Sept. 28,

dowment of two million dollars. The board would release the money after the college had met its commitment by raising the remainder.[23]

Unfortunately, in 1921 the college found itself hard pressed to solicit the necessary subscriptions. Dean Page requested an advance on the General Education Board's grant in order to avert a financial crisis at the school. He complained bitterly to Flexner about the difficulties he encountered trying to fill the chair of surgery, made vacant by virtue of Ransohoff's retirement.

> I have been in touch with nearly every available surgeon in the United States," he wrote, "and three (Dandy and Heuer of Hopkins and Pfemister of Chicago) have visited us, only to turn down our offer because we have not enough to run a real Chair of Surgery-as

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1920, General Education Board Papers, Box 706. Also, "Henry Page," Cincinnati Journal of Medicine 2: 105-106 (1921); "Praise is Voiced by New Dean of Educational Opportunity Offered by University," Enquirer, May 22, 1921; and, "U.C.'s New Dean and the School's Future," Cincinnati Commercial-Tribune, May 20, 1921, Holmes Scrapbook.

23 "$2,000,000 Goal of U.C. Neared by $700,000 Gift," Commercial-Tribune, Dec. 1, 1920, Holmes Scrapbook. Also, Board of Trustees Minutes, Dec. 11, 1920.

> compared with Chicago, St. Louis, Baltimore and other schools endowed [by the General Education Board] which provide double and treble the sum we can offer.[24]

Flexner not only arranged for the requested advance, he encouraged the Carnegie Foundation to give an additional $200,000 to help the financially strapped school.[25] Moreover, Flexner helped to persuade George Heuer, associate professor of surgery at Johns Hopkins University, to accept Cincinnati's offer. Heuer later acknowledged that the terms of his contract were set after a conference with Flexner in New York.[26] Significantly, Heuer's contract gave new flexibility to fulltime. Eager to attract a surgeon of Heuer's standing, the University of Cincinnati Board of Trustees agreed to his demand that a ward in the General Hospital be set aside for his exclusive use

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[24] Letter, Henry Page to Flexner, Sept. 9, 1921, General Education Board Papers, Box 706.

[25] Letters, Henry S. Pritchett to Flexner, Oct. 25, 1921; Flexner to Pritchett, Oct. 31, 1921; Smith to Carnegie Corporation, Oct. 31, 1921, General Education Board Papers, Box 706.

[26] Letter, George J. Heuer to U.C. Board of Trustees, Aug. 6, 1922, General Education Board Papers, Box 706.

to pursue clinical research and to treat private patients.[27]

Heuer also turned to his mentor and friend, William Stewart Halsted, for advice before accepting the position. Despite the fact that the new endowment offered great possibilities, Halsted hated to see his protege leave Baltimore. "I am quite despondent at the loss of Heuer," he wrote, "...He covers the whole field of surgery better than anyone in the United States. He operates beautifully, tranquilly and honestly." Somewhat more practically, Halsted warned Heuer: "Before accepting you should stipulate that your voice must have great weight in the choosing of the [surgical] faculty, otherwise you might have endless conflict with men whose views are antagonistic- who could surpass you in political intrigue."[28] The

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27 Board of Trustees Minutes, Dec. 6, 1921. Also, "Surgical Chief Is Selected by Directors of University," Enquirer, Dec. 7, 1921 and, "Baltimorean Is Invited to Medical College," Times-Star, Dec. 7, 1921, both in Holmes Scrapbook. Also, Letter, Hicks to Flexner, Dec. 28, 1921, General Education Board Papers, Box 706.

28 Halsted quoted by Merton L. Griswold, Jr., M.D., "George J. Heuer, M.D., A Critical Analysis of the Role that He Played in Introducing the Residency System of Teaching," Surgery 78: 349 (Sept. 1975). The unabridged version used here is in the Heuer Papers, Medical Archives, New York Hospital-Cornell University Medical Center.

university's board quickly allowed that Heuer alone would nominate the surgical faculty and that a surgical laboratory, modeled on the Hunterian Laboratory at Johns Hopkins, would be established.[29]

Heuer's appointment, late in the fall of 1921, brought the wrath of Cincinnati's medical community down on the medical college. Overnight the question of fulltime became a burning issue. Clinical professors at Johns Hopkins and other medical schools previously endowed by the General Education Board, were required to give their entire time to their duties. Heuer, however, was permitted not only to treat private patients but in his very own ward in the city hospital. The terms of Heuer's contract became the central issue binding together all those who had for years opposed Holmes and Dabney in their single-

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[29] Heuer's laboratory on the fifth floor of the Pathological Institute of General Hospital, consisted of two large and three small operating rooms, animal cages and a run. An elective course in animal surgery was offered to undergraduates who rotated through the positions of surgeon, assistant, anesthetist and pathologist, operating primarily on dogs. In addition, residents were expected to work in the laboratory perfecting techniques. Between 1922 and 1925, the faculty and resident staff published over fifty articles of which Heuer was the chief author of thirteen and Mont Reid responsible for eleven. Heuer's

minded determination to build a nationally recognized medical school in Cincinnati.

It is important to note in this regard that George Heuer was not the first fulltime clinical professor on the medical faculty. In 1917, Roger S. Morris first occupied the newly endowed chair in medicine and three years later, in October 1920, Kenneth Blackfan, associate professor of pediatrics at Johns Hopkins, was appointed the first Benjamin K. Rachford Professor of Pediatrics. Both men maintained consultation practices and neither drew the slightest criticism from local practitioners.

There was, however, a critical difference between Morris' and Blackfan's situations and Heuer's. The endowments supporting the former two were entirely derived

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work dealt with thoracic surgery in the "Effects of Pneumonectomy on Animals," and "Transplantation of the Diaphragm As An Adjunct in the Treatment of Lesions at the Lower End of the Esophagus." The latter he published with two residents, Wm. Andrus and Glenn Bell, a frequent practice. Reid's interest in vascular disease was apparent in three articles on surgical treatment of angina pectoris and one on aortic surgery. For a fuller description of the laboratory and a bibliography covering the years, 1922-1925, see George J. Heuer, M.D., "Graduate Instruction in Surgery at the University of Cincinnati," University of Cincinnati Bulletin (Cincinnati: University of Cincinnati,

from local philanthropic sources. Furthermore, these two were appointed while Dabney and Holmes still held firm rein on the college. Ironically, it mattered little to Heuer's opponents that Flexner was simply following college policy. In no mood for reason, local doctors perceived in Heuer's position, the threat by a national foundation to buy and make over their medical college, an institution they had helped to build and staff, a great source of civic pride in Cincinnati.

Following Heuer's arrival, rumors circulated widely of an impending reorganization in the surgical department. Fearing the loss of tenure and staff positions at the General Hospital, the faculty quickly organized against Heuer. Charles Bonifield, professor of gynecology and editor of the Journal of the Cincinnati Academy of Medicine, led the fight. He was joined almost immediately by two of Heuer's subordinates, Dr. W. D. Haines, associate professor of surgery, and Dr. Charles T. Souther,

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1925). This forms part of volume 1 of Heuer's Collected Works, pp. 3-19 in the History of Health Sciences Library, University of Cincinnati. Also, Heuer, "University of Cincinnati Medical College: Teaching of General Surgery," in Methods and Problems of Medical Education, 8th series (New York: The Rockefeller Foundation, 1927), pp. 320-322, 325-326.

instructor of surgery. A third ally, Dr. Samuel P. Kramer, a former professor of clinical surgery, initiated legal action against the university. These men were no strangers to conflict. Some years earlier both Bonifield and Kramer had skirmished with Dean Holmes over problems of medical college policies. Bonifield survived but Kramer lost and left the college in a huff in 1917.[30]

Heuer's problems in Cincinnati involved more than a question of economics. Certainly his ability to attract private patients galled local practitioners. But there was another more important factor which engendered even greater resentment toward Heuer and rendered the opposition unyielding in its determination to rid the faculty of this outsider from the east. Profound differences separated Heuer from the majority of local surgeons, particularly differences in surgical techniques arising out of opposing concepts of the practice of surgery.

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30 Minutes of the Cincinnati Academy of Medicine, Dec. 12, 1921. Also, "Dr. Page Defends Action Taken by Medical College," Times-Star, Dec. 13, 1921, Holmes Scrapbook.

Heuer's cold and distant demeanor signalled that he would be uncompromising and that if surgery were to be done at General Hospital, it would be his way and his way alone. Heuer arrived in Cincinnati with a retinue of surgeons from Johns Hopkins, an indication that he was not only taking up his post but was taking over the department as well. Mont Reid, another Halsted protege, was named associate professor of surgery. Burr Noland Carter, a Hopkins graduate, became resident surgeon and responsible only to Heuer for every patient on the surgical service.

Both Heuer and Reid were dissatisfied with conditions they found in the surgical department and hospital. Some months after arriving in Cincinnati, Heuer voiced his dismay to Halsted:

> I have watched some of the surgeons do simple things like hernias with utter amazement," he wrote, '"Such things as control of hemorrhage, gentle handling of tissues, nice approximation of structures all seem to be unknown...Whether or not they will be able to grasp the difference between their ways and mine I do not, of course, know as yet.
> [31]

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[31] Heuer, quoted by Griswold, "George J. Heuer, M.D.

Reid was no less acerbic in his comments:

> There is a time-consuming disposal toward intimate fellowship," he told Halsted. "Groups gather about an attending surgeon who is amusing them with smutty jokes or otherwise courting them for the sole purpose of securing their practice-their ideals are different-they do not study-the morale is poor-we are organizing the teaching-the surgical department, pathology, nursing and so forth.
> [32]

Shortly after Heuer arrived, the Cincinnati College of Surgeons gave a dinner for him in February 1922. The speeches signalled the beginning of open warfare. The opening salvo was sounded by the toastmaster who was none other than Charles Bonifield and who warned the guests in no uncertain terms that gifts of gold from national foundations threatened the college's independence and freedom.[33] It was an old story. Bonifield had pre-

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A Critical Analysis," p. 9.

[32] Ibid., Reid quoted by Griswold.

[33] "Ideals for College Outlined," Enquirer, Feb. 1, 1922, Holmes Scrapbook.

viously used editorials in the Journal of Medicine just to denounce his colleagues who, in his words, scrambled for the "Rockefeller-Carnegie millions" and worshipped at the "shrines of two fetishes-research and fulltime medicine." What place, he asked, did the "schoolman professor" have in a college supposed to educate private practitioners?[34]

Heuer met Bonifield head on, telling the dinner guests in uncompromising terms that, "the promotion of research must be of primary consideration: in any modern medical college."[35] What Heuer understood so well and his audience did not was that research was much more than a simple exercise in the laboratory. It was, in fact, an approach to surgery based not only on pathology but on physiology as well. For Heuer, the surgeon was first a physiologist and pathologist and only later a clinician.[36]

When Heuer first came to the hospital, he was dis-

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34 "The Future of Medicine and the Medical Profession," Journal of Medicine 3: 1-5 (March 1922).

35 Ibid.

36 "Ideals for College Outlined." See also Heuer's unpublished biography of wm. Stewart Halsted, Heuer Papers, folder 35.

mayed to find surgical patients with infected wounds and with little or no effort on the part of the attending physicians to clear them up. "You would be shocked were you to visit our surgical wards," he wrote Halsted.[37] Following the tenets of Halsted, Heuer stressed the control of hemorrhage, careful handling of tissue and asceptic technique in order to prevent infection and promote healing. For Heuer this was only the beginning of the surgeon's responsibility. In addition, he demanded that his staff take thorough case histories, and make repeated clinical examinations. All tissue removed in surgery had to be examined in the laboratory to confirm the surgeon's diagnosis. Any error in diagnosis was cause for an immediate reassessment of the entire process.[38] Heuer's rigid techniques served to reinforce his image as an outsider, the expert from the nation's leading medical school, come to Cincinnati-by virtue of money from a national philanthropy-to upbraid local surgeons for their incompetency,

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37 Heuer quoted by Griswold, "George J. Heuer, M.D., A Critical Analysis," p. 9.

38 George J. Heuer, "The Training and Qualifications of the Surgeon," Southern Medical Journal 23: 24-29 (Jan. 1930).

in the end, to wrest control of their medical college from them.

Bonifield and his colleagues sharply disagreed with Heuer as to the place and value of the laboratory in surgery. To them, medical education had gone too far glorifying the magic of the laboratory and, they argued, ignoring the human element of experience. Dr. Souther, for example, placed extraordinary value on the surgeon's experience and intuition arrived at in the subconscious by some unknown but time-trusted process. Science for him was logical thinking enhanced by experience.[39] Learning to operate was much like fixing an old road, filling in potholes, straightening curves, reducing grades and most important, placing markers. Road signs gave direction and sounded warnings and were useful in teaching younger colleagues. And, after all, Bonifield frequently reminded Heuer, the medical college existed primarily to train practitioners and not to engage in science.[40]

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39 Dr. Charles T. Souther, M.D., "The Duty of the Profession to the Public and the Duty of the Public to the Profession," Journal of Medicine 2: 381-386 (Jan. 1922).

40 Dr. W.D. Haines, M.D., "Book Review: Collected Papers of the Mayo Clinic," Journal of Medicine, 3: 72-73 (April 1922). Also, Haines, "The Influence of the War upon

Heuer's opponents would have railed at the very suggestion that they were reactionary in their attitude toward the laboratory. For them, experiments on lower animals were a "necessary aid to research," but an aid that supplemented and confirmed experiential knowledge. Medical societies were more important than laboratories because they provided a forum where one could easily increase his knowledge simply by listening to the case histories described by his colleagues.[41]

One of Heuer's innovations, which effectively cemented his power, involved the establishment of one of the country's earliest pyramidal residency programs at the University of Cincinnati College of Medicine in 1922. Each year, in what proved to be a six year program, the resident progressed, taking on more responsibilities in the operating room, laboratories and the classroom. The first year resident was in charge of the surgical pathological laboratory under the direction of Mont Reid and was required to examine all surgical specimens.

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the Development of Surgery," Journal of Medicine 1: 155-160 (Jan. 1920).

41 "Vivisection," Journal of Medicine 2: 335-336 (Dec. 1921).

Rotation through the surgical specialties began in the second year with the frature service and ended in general surgery in the fifth year. One sixth year resident was chosen resident surgeon and was placed in complete charge of all cases on the surgical wards, except for gynecology patients who remained under Bonifield's supervision. Otherwise all residents were responsible to their seniors. The chief resident was responsible only to Heuer.[42]

In a measure, Heuer was successful in establishing the residency program and was able to attract many Johns Hopkins graduates because of the generosity of Holmes' earlier allies and friends who came to his support. The widow of Dr. Joseph Ransohoff, Heuer's predecessor, and William Cooper Procter, the philanthropist who was later responsible for Cincinnati's Children's Hospital and its Research Foundation, endowed fellowships in the new graduate program in surgery. [43]

Heuer not only improved the curriculum, he reorganized the department as well, another factor which

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[42] Heuer, "University of Cincinnati Medical College: Teaching General Surgery," pp. 322-326.

[43] Heuer, "Graduate Instruction in Surgery," p. 4.

strengthened his position. Only four Cincinnati surgeons survived his scrutiny including J. Louis Ransohoff, Frank Fee, Dudley Palmer and J.A. Caldwell. The rest, Heuer dismissed with the provision that although they could continue to admit patients they were not to set foot in the operating room of General Hospital.[44] Incensed, the opposition prepared to fight Heuer in court.

In 1924, Samuel P. Kramer brought suit against the college of medicine charging that it illegally set aside a ward in General Hospital for Heuer's own private use. Dr. Kramer argued that the people and the medical profession of Cincinnati had built the college and hospital. Now, he said, an outsider had usurped them for his own purposes. This situation came about, Kramer charged, because Christian R. Holmes had traded the school's independence for money from the Carnegie Foundation and the General Education Board. The Supreme Court of Ohio ignored Kramer's diatribe against Holmes but nevertheless found that the college had indeed acted illegally. On hearing the decision, Heuer's opponents were wild with joy.[45]

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[44] Griswold, "George J. Heuer, A Critical Analysis," p. 9.

[45] "Editorial Comments: Supreme Court of Ohio,"

Despite the decision, Heuer was not defeated. When the so-called research ward had failed to become a reality, he and Reid began admitting their patients to Jewish Hospital, a short distance from the medical college. There, with the help of Bette Fleischmann Holmes, the two built up a wealthy clientele. Both Heuer and Reid were thoroughly convinced that the college needed a private pavilion so that the entire faculty could extend its services to these people. In May 1926, Mrs. Holmes endowed a new hospital with a gift of $250,000, requesting that it be named "The Christian R. Holmes Hospital of the University of Cincinnati."[46]

Soon, the Taft family and Wm. Cooper Procter added substantial contributions as well. By June, a sufficient amount had been collected and the university's board of trustees resolved to provide the medical college with its own hospital where patients would be required "to pay for their accomodations and for the medical and surgical services rendered to them..."[47]

Journal of Medicine, 5: 59-60 (April 1924). Also, "General Hospital," Journal of Medicine, 4: 176-177 (June 1924).

46 Mrs. Holmes' letter of May 19, 1926 is recorded in Board of Trustees Minutes, June 8, 1926.

47 Ibid., Minutes of June 8, 1926.

By late fall, it was clear that more money was needed to complete the hospital. Mont Reid conferred with Abraham Flexner in New York, asking his help in raising the additional funds. Flexner willingly took on the problem and thereby gave his full blessing to the project which would give complete definition to the concept of geographical fulltime. Reid supplied the secretary with a copy of the hospital's proposed budget along with those of individual departments in the college. Obviously, Reid fully expected that Flexner would find a solution. "I am very anxious to know what success you have had in securing the $100,000 I discussed with you," he wrote Flexner on December 20. "Since I came back, we have made no further attempt to raise this money here."[48]

Whether or not Flexner intended to ask the General Education Board to fund the project is not clear. However, he did take on the role of middleman between the college and Mrs. Holmes, who then resided in New York. Reid

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48 Letter, Reid to Flexner, Dec. 20, 1926, General Education Board Papers, Box 706. It seems unlikely that Flexner intended to ask the General Education Board for money for U.C. At the time, he had already come under heaby criticism from his colleagues on the board for his autocratic methods. Flexner left the board in June 1928, resigning after Trevor Arnett demanded that he do so.

confided to Flexner that he thought the name, Holmes Hospital, a poor choice. He asked the secretary to point out to the dean's widow that the simple name, "University Hospital," would be preferrable, improving as it would the hospital's chances of attracting financial gifts in the future. Reid was anxious to avoid the misconception that the hospital's original endowment would take care of its future needs.[49]

Flexner was unable, or perhaps did not even try to dissuade Mrs. Holmes in her choice of names. However in February, she did add to her contribution.[50] Furthermore, the university's board of trustees released money from the General Education Board's grant to allow construction to get underway.[51] Ultimately then, Abraham Flexner and the General Education Board together were instrumental in helping to build the faculty's hospital. There could be no denying its purpose. Written regulations at Holmes

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49 Letter, Reid to Flexner, Jan. 31, 1927, General Education Board Papers, Box 706.

50 Board of Trustees Minutes, Feb. 17, 1927,

51 Ibid., March 4, 1930.

Hospital required that: "In all cases the patient must arrange with the physician or surgeon and anesthetist for his fee and all such fees must be paid direct to the physicians."[52]

With the opening of the Christian R. Holmes Hospital of the University of Cincinnati, which had forty-two private rooms and a surgical suite, in May 1929, Heuer won. But the battle was particularly bloody with heavy casualties. Its aftermath was marked by bitterness and resentment. To this very day, many local practitioners in Cincinnati continue to view the faculty of medicine as outsiders. Heuer was initially responsible for that impression. He came to the university with the odious title of fulltime, an idea anathema to the local doctors who taught part-time and resented Heuer's continued ability to attract private patients. However, Heuer not only challenged the pocketbooks of Cincinnati's surgeons, worse than that, he insulted their abilities as surgeons.[53]

For Heuer, fulltime medicine was not simply an economic arrangement but rather a state of mind. He firmly

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52 Ibid., April 2, 1929.

53 Interview with Dr. Wm. A. Altemeier, M.D., former Christian R. Holmes Professor of Surgery, March 16, 1981, in his office at the College of Medicine.

believed that the essence of fulltime medicine was research which went beyond laboratory studies to become a never-ending search for comprehension of the physiological mechanisms of the human body.

For Abraham Flexner too, the central i-sue in full-time had ceased to be economics. The very man who had been so unyielding in his interpretation of fulltime policies for Johns Hopkins and other schools endowed by the General Education Board, had by the twenties lost his overriding obsession with the evils of outside practice. Not that he now allowed any latitude at those schools, for he continued to demand rigid observance of their agreements.

Flexner's change of attitude was apparent in his program for "Medical Education in the United States," written in 1919. In it, he quoted Dr. Nellis B. Foster, formerly professor of medicine at the University of Michigan and chief of the medical service in three different military hospitals during World War I. "There can be very little question," Foster observed, "that medical inefficiency is much more widespread than we have been willing to admit." Only with the greatest difficulty had physicians been found who were competent to act as chiefs

of service for the 150 base hospitals. The problem was a vast "want of scientific training" in the medical profession. Flexner admitted that "a few strong schools are indeed training well-qualified practitioners, but it is still true that by far the larger number of our medical schools have made only slight progress." Flexner's new goal became the improvement of a large number of medical colleges rather than experimenting with teaching methods in a few. He would accomplish this in part by introducing research oriented teachers to previously locally dominated medical faculties.[54]

In the case of the University of Cincinnati College of Medicine, Flexner had long been friendly with President Charles Dabney and Dean Christian R. Holmes. He was impressed with the progress the two had made since he first visited the college in 1909. Dabney and Holmes had managed to gain control of the city's new hospital, an essential requirement for sound clinical teaching, and had convinced many faculty members of the vitues of giving the majority of their time to teaching and research. In addition, the faculty was housed in a new college

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[54] Flexner, "Medical Education in the United States: A Program," pp. 1-2.

building conveniently located adjacent to the General Hospital. Flexner was equally impressed with the generosity Cincinnati's citizens displayed in supporting the college. Private philanthropy was essential in the development of a modern scientific medical center and Cincinnati understood well that it could not look solely to outside foundations to make the school a success. All in all, Flexner thought, Cincinnati could serve as an ideal model for other cities to follow in caring for the health and well-being of their citizens.

The death of Holmes in 1920 and Dabney's retirement soon thereafter held up but did not completely deter Flexner's plan to endow the college. First, however, Flexner publicly demanded that the university's trustees agree to place the clinical department heads on fulltime, that is to reorganize the college in order to be eligible for a grant from the General Education Board. He spoke out on the need for the school to shake off its local ties and to attract physicians nationally known for their teaching and research abilities. An inbred faculty, Flexner declared, guaranteed continued stagnation. What U.C. needed was a bright, young outsider with impeccable credentials to shock the faculty out of its clannish provincialism.

By all counts, Heuer was the perfect choice as head of the surgery department. He had already established himself at Johns Hopkins as a teacher and surgeon of some renown. Moreover, he was thick-skinned and tenacious in his determination to make over the department and surgical wards of the General Hospital. Despite a stormy first few years, Heuer eventually had his way. Policies he established were continued when Heuer left in 1932 to become the first chairman of surgery at the new New York Hospital-Cornell University Medical Center. Mont Reid succeeded Heuer until his untimely death in 1943. After that, Burr Noland Carger, Heuer's first resident surgeon, became head of the department and the tradition continued.

Part of that tradition has been the surgical faculty's unswerving defense of geographical fulltime, which continues to this day. Abraham Flexner played a direct and active part in establishing the university's liberal interpretation of his policies. His actions regarding U.C. belie the notion, one Flexner himself frequently voiced, that he hoped and expected that someday medical

faculties would come to their senses and realize that strict fulltime was the only way to conduct a first rate medical school.[55] In fact, Flexner went so far as to help the U.C. faculty to avoid that very eventuality, first by advising Heuer on the terms of his contract, thus endorsing a local precedent, and later, by advising Reid and Mrs. Holmes on the completion of Holmes Hospital

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55 In its Annual Report for 1919-1920, the General Education Board stated that:

> It would be a serious mistake to leap to the conclusion that the full-time plan ought to be universally employed at this time. Its cost is very great, and while experience thus far sustains the presumption...that the system is worth the price, it still remains to be objectively proved that...it is so much better that universities generally should move to its adoption...Premature efforts to force the pace unduly might provoke a reaction which may in the end retard progress.

See Annual Report of the General Education Board, 1919-1920 (New York: General Education Board, 1920), pp. 31-

which served to guarantee the future of geographical full-time at the college of medicine.

Many questions remain to be answered about the fulltime plan and how it worked at different schools. There is even a question as to just how strict it was at Johns Hopkins. Heuer maintained that the reorganization of the surgery department there made little difference except that he and Halsted received salaries. However, he maintained, they continued to treat private patients.[56] Furthermore, in 1940, Johns Hopkins attempted to lure Mont Reid from Cincinnati, offering him the chair of surgery there. Amazingly, Johns Hopkins went so far as to agree to Reid's demand that he be allowed to engage in private practice if he accepted. Cincinnati managed to keep Reid only after a vigorous campaign was waged to increase his department's endowment.[57]

Ultimately, geographical rather than strict fulltime came to be the most common arrangement in American medical schools. Abraham Flexner's role in establishing it is

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[56] Heuer, unpublished Halsted biography, chapter, "Methods of Work at Home and in the Laboratory," pp. 10-11.

[57] Johnson McGuire, M.D., "A Short Biography of Mont R. Reid," Reid's Collected Works, Vol. 1, History of Health Sciences Library, University of Cincinnati.

only now coming to light. Although inconclusive, the evidence from the University of Cincinnati College of Medicine indicates that by 1920, Flexner, although he was loath to admit it, agreed with Bevan and his other critics that a clinical professor was, in fact, both a practitioner and a scientist.

Chapter VII

"A Child Is Not A Little Man: The Establishment of Fulltime Medicine in the Department of Pediatrics At the University of Cincinnati College of Med Medicine, 1883-1940.

The creation of a fulltime faculty in the surgery department at the University of Cincinnati College of Medicine created an unending furor among the medical faculty and engendered the lasting hostility of many of the city's physicians. Paradoxically at about the very same time, the fulltime system of medicine was introduced into the pediatric department with little fanfare and the whole-hearted blessing of Cincinnati's medical profession. The striking contrast between the ongoing hot debate in surgery and the early success of fulltime medicine in pediatrics was due not only to the personalities involved but more especially to the internal history of pediatrics as a medical specialty and the nature of private philanthropy in Cincinnati.

Although American physicians had always counted children among their patients, pediatrics first emerged as a medical specialty in the United States in the last half of the nineteenth century. However, the recognition that children's health problems were unique did not occur overnight. As early as 1860, Abraham Jacobi established the country's first children's clinic at the New York

Medical College where he taught medical students to diagnose and treat infantile pathology. Not until ten years later, however, was Jacobi appointed professor of the Diseases of Children at the College of Physicians and Surgoens in New York City, the first such appointment in the city. Even then Jacobi was not accorded full faculty privileges and pediatrics continued to be viewed as a subspecialty within the department of medicine.[1]

Jacobi's position at the College of Physicians and Surgeons remained unique until 1876 when Bellevue Hospital appointed Job Lewis Smith, who was passionately concerned about the short and wretched lives of New York's tenement children, to teach a course on the diseases of children to medical students. It was not, however, until 1888, over a decade later, when Harvard University acknowledged pediatrics as a separate specialty by naming Thomas Morgan Rotch assistant professor of the diseases of

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[1] Thosmas E. Cone, Jr., M.D., History of American Pediatrics (Boston: Little, Brown and Co., 1979), pp. 102-103/ Unfortunately, Jacobi's papers and autobiography were lost in a fire in 1918. See also Isaac A. Abt, M.D., and Arthur F. Abt, M.D., Abt-Garrison History of Pediatrics (Philadelphia: W.B. Saunders Co., 1965). This small but

children.[2]

That very same year, a group of physicians, including practitioners as well as medical professors, joined together to form the American Pediatric Society, thus recognizing the importance of pediatrics in medical practice. The society's formation was the idea of Job Lewis Smith, who was chairman of the Pediatric Section of the International Congress of Internal Medicine. Smith was well aware of the opposition which obstetricians and gynecologists demonstrates several years earlier in 1881 when Abraham Jacobi and Samuel Busey, his close associate and professor of the diseases of children at Georgetown University, attempted to organize a section on pediatrics in the American Medical Association. Although initially successful, the group disbanded after only six years. The experience convinced Smith that a new and entirely separate organization was necessary for physicians interested in the diseases of children. Therefore, Smith formed an organizing committee which sent invitations to forty-eight prominent

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highly useful volume contains histories by various authors from Isaac Abt's Pediatrics as well as new chapters as well as new chapters by his son, Arthur.

2 Ibid., Cone, pp. 103-104.

physicians all of whom had already evinced their deep interest in pediatrics. The group, which met at the Arlington Hotel in Washington, D.C. for three days in September 1888, agreed to form an organization devoted to "the advancement of the Physiology, Pathology and Therapeutics of Childhood Diseases."[3]

Among those who attended were some of the most illustrious physicians of the day including William Osler, then professor of medicine at the University of Pennsylvania, August Caille, who taught pediatrics at the Post Graduate Medical School in New York throughout his long and distinguished career, Arthur Vincent Meigs of Philadelphis, a practitioner who was an authority on infant feeding, and Joseph O'Dwyer of New York, who devised the tracheotomy tube and thus dramatically decreased the prevailing hig mortaality rate among children in diphtheria and croup, and Frederick Forchheimer of Cincinnati, who in 1883 helped to establish the city's first pediatric institution, the Home for Sick Children.

Forchheimer and most of the other founders of the

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3 Harold Kniest Faber, M.D. and Rustin McIntosh, M.D., History of the American Pediatric Society, 1887-1965 (New York: McGraw Hill Book Co., 1966). This work chronicles events at annual meetings and as such is not an analysis of the society's history.

American Pediatric Society both practiced and taught general medicine, reserving a portion of their lectures for diseases of children. Unusual among the founders were Thomas Morgan Rotch and Luther Emmet Holt, director of the Babies Hospital in New York City, who devoted themselves exclusively to sick children. The vast majority of the founders, as well as the physicians who were later elected to membership by virtue of their professional accomplishments and their interest in children, considered pediatrics a specialty within the general practice of medicine. In this way, members of the A.P.S. introduced instruction in pediatrics into American medical schools.[4]

A good case in point is Frederick Forchheimer, who served as president of the American Pediatric Society in 1895. A native of the city, Forchheimer was educated at Woodward High School before attending medical school at the College of Physicians and Surgeons in New York City. After his graduation in 1873, he studied in Strassburg and Wurzburg for two years before returning to Cincinnati in 1875 to enter private practice. A success-

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[4] Ibid., pp. 8-10.

ful diagnostician, Forchheimer was soon elected both to the staff of the Cincinnati Hospital and the faculty of the Medical College of Ohio, where he successively taught physiology, pathology, and chemistry.[5]

In both practice and teaching, Forchheimer demonstrated his growing interest in pediatrics. He not only helped found the Home for Sick Children in 1883, but he was also appointed the first medical director there. Under his direction, thirty children ranging in age from infancy to twelve years received specialized medical and nursing care.[6] Realizing how much these children benefitted from such care, Forchheimer took steps in 1880 to establish a Children's Dispensary at the Cincinnati Hospital where he treated the poor children of the city and instructed medical students in the problems encountered in caring

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[5] "The Historian's Notebook: Dr. Frederick Forchheimer, His Contributions to Pediatrics," Ohio State Medical Journal 58 (Feb. 1962). Reprint, Victor Greenebaum Papers, Robert A. Lyon Library, University of Cincinnati Department of Pediatrics.

[6] Arthur C. Bachmeyer, "The Hospitals of Cincinnati During the Last Century," University of Cincinnati Medical Bulletin, Centennial Number, 1920, pp. 45-46. See also Morris J. Vogel, The Invention of the Modern Hospital, Boston, 1870-1930 (Chicago: The University of

for the young.[7]

In 1895, the same year in which he was elected president of the American Pediatric Society, Forchheimer was appointed professor of medicine at the Medical College of Ohio. Immediately he instituted a series of lectures on the diseases of children. His lucid clinical descriptions and knowledgeable classroom discussions on diphtheria,

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Chicago Press, 1980), pp. 63-64. Vogel points out that when it was established in 1869, Boston's Children's Hospital focused on the "moral benefit" it provided the youngsters. Ten years later, the emphasis had shifted to medical care particularly in the area of orthopedics. Many patients at Cincinnati's Home for Sick Children were orthopedic cases of one sort or another. Indeed, along with feeding problems, orthopedics constituted a major concern for pediatricians and general practitioners alike. For an analysis of this topic, see Saul Benison, "An Interpretation of the Early Evolution of Care adn Treatment of Crippled Children in the United States," Birth Defects: Original Articles Series, XII: 103-115 (The National Foundation, 1977).

[7] "The Historian's Notebook..."

whooping cough and other ailments plaguing children soon gained popularity with medical students who flocked to his lecture room.[8]

In addition to his teaching duties and work at the Home for Sick Children and the Children's Dispensary, Forchheimer also maintained a large private practice. Fortunately for the over worked Forchheimer, a former student, Benjamin Knox Rachford, whose abilities Forchheimer admired, shared his interest in the diseases of children. In 1890, when Forchheimer asked Rachford to assume responsibility for directing the new Children's Dispensary at the Cincinnati Hospital, the younger man eagerly accepted.[9]

Rachford's credentials made him an ideal choice in Forchheimer's opinion. Born in Alexandria, Kentucky,

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8 Ibid.

9 Robert A. Lyon, Benjamin Knox Rachford (Cincinnati: Educational Horizons Publisher, Inc., 1972), pp. 5-18. See also J. Victor Greenebaum, "The Pediatrics Department of the College of Medicine," University of Cincinnati Bulletin 1: 38 (June 1921). Also, Max Dreyfoos, "Dr. Benjamin Knox Rachford," Cincinnati Journal of Medicine, July 1929, reprint, Greenebaum Papers.

Rachford evinced an early interest in medicine which was nurtured by his father and grandfather, both physicians. To prepare Bernard for medical school, his father sent him to Cincinnati to attend Hughes High School. Later, the elder Rachford watched as his son distinguished himself as one of the best students at the Medical College of Ohio. At his graduation in 1882, Rachford received several awards for his outstanding work among them the prize given by Professor Joseph Ransohoff for excellence in descriptive anatomy. Having received one of the highest grades in a competetive examination Rachford also qualified for an internship at Cincinnati Hospital, a coveted position sought by the best students.[10]

Following his internship, Rachford planned to pursue scientific studies in Europe but was forced to postpone his plans due to the illness of his parents. Instead, he established an office in Newport, Kentucky and accepted a position teaching bacteriology at the Medical College of Ohio. Like most of his contemporaries, Rachford did not choose any one medical specialty but rather considered all of the growing body of medical knowledge within his

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10 Ibid., Lyon, pp. 5-16.

purview. He therefore not only practiced general medicine, attracting large numbers of patients, both adults and children, he also taught several branches of medical science including both physiology and materia medica.[11]

In 1897, in addition to his duties at the Children's Dispensary, Rachford also assumed responsibility for all of the young patients admitted to the Cincinnati Hospital. He was distressed by the fact that children were admitted and placed on wards at random throughout the entire hospital. "I decided," he later wrote, "that there was something radically wrong in the whold system of caring for infants and children in the wards of a general hospital." Now, more than ever convinced that sick children merited special attention, Rachford organized a pediatric service at the hospital which consisted of one ward with a large adjoining porch reserved for the outdoor treatment of patients with tuberculosis and pneumonia.[12]

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[11] Ibid., p. 19.

[12] Ibid., pp. 19-24.

Other members of the medical staff at the Cincinnati Hospital did not share Rachford's convictions about the need for a children's ward, and continued to admit their patients, young and old, to their own services. However, according to hospital rules, only Rachford could sign a child's death certificate. A crisis was precipitated when he refused to do so following the death of a child whom he had never seen on the orthopedic ward, a child who died not because of his bone disease but because of malnutrition. Rachford stubbornly refused and the medical staff, sympathetic to his plight, asked him to devise a new and more appropriate policy regarding pediatrics.[13]

Under Rachford's new rules, all children five years of age and younger were admitted only to the pediatric unit. There, Rachford and the specialist together supervised both the medical and nursing care. The younger children, particularly infants Rachford found, were more likely to suffer from childhood problems in addition to their disease and needed his pediatric expertise as much as the attention of the orthopedist or surgeon. Older children were admitted first to the pediatric service where Rachford or one of his assistants conducted a thorough

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[13] Ibid., pp. 23-24.

physical examination to be certain that the child was not suffering from a childhood disorder along with his other problems. Those who had no need for special pediatric care were then transferred to the appropriate medical service.[14]

Rachford was guided in his actions by his often stated belief that the child was not "a little man," a replica of an adult merely smaller, but rather "a very inclomplete structure lacking symmetry and uniformity." Rachford attributed the child's unique susceptibility to certain life threatening diseases to the fact that he was in an immature stage of life. Physiologically "underdeveloped, unstable and weak," the child was prey to a large variety of diseases from which he must be protected. It was the responsibility of the pediatrician, Rachford argued, to assist and promote the child's growth through his special knowledge of proper nutrition and hygienic measures which could afford the proper protection from disease.[15]

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[14] Ibid., pp. 24-25.

[15] Ibid., pp. 21-22. See also Rachford, "A Child Is Not A Little Man," Cincinnati Lancet-Clinic, May 9, 1896, reprint, Rachford's Collected Works, Lyon Library.

Rachford's view of the child fostered a new and broader concept of pediatrics in which the child's state of physical growth became an object for study as well as a basis for understanding childhood diseases. Recognizing that the focus of pediatrics was coming to center on the child himself, the Medical College of Ohio, at Rachford's urging, created a separate department of pediatrics in 1901, appointing Rachford professor of the diseases of children.[16]

Rachford was not alone in his awareness of the need for increased study of the child and his unique physiological state. In fact, in 1895 Thomas Morgan Rotch published a textbook, Pediatrics,[17] a book whose title differed significantly from one published a year earlier by Luther Emmet Holt, The Diseases of Infancy and Childhood.[18]

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16 Minutes of the Faculty of the Medical College of Ohio, June 14, 1901. At the same meeting, a lecturer was appointed in embryology, an indication of the distinction made between initial development and childhood.

17 Thomas Morgan Rotch, Pediatrics (Philadelphia: J.B. Lippincott, 1895).

18 Luther Emmet Holt, The Diseases of Infancy and Childhood (New York: D. Appleton and Co., 1897).

Whereas Holt was primarily concerned with individual diseases, Rotch emphasized the importance of normal physical development, a topic heretofore largely ignored. To understand childhood pathology, Rotch argued, the physician first had to be thoroughly familar with the child's normal progress of physical development. Rotch was quick to acknowledge that not enough was known about the various "periods" through which a child passed. But by studying development, he said, "we are acquiring an alphabet, which when mastered will enable us to read the otherwise obscure language presented by the various diseases of early life."[19]

This view of growth as an evolutionary process was subsequently accepted by any number of physicians who in time began to focus much of their attention on babies. One of the most common problems among infants, they found, was summer diarrhea, a disease which stubbornly eluded all attempts to treat it. The solution, Rotch, Holt, Rachford and other pediatric experts insisted, lay in "dietetic management." Diarrhea and other gastrointestinal ailments grew out of the baby's immature physical state

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19 Rotch, pp. v-18.

and could not really be cured but only managed through "scientific feeding." Pediatricians hoped to aid the baby in its struggle to survive by substituting cow's milk to which fat, carbohydrate and protein had been added for mother's milk. In one major city after another, physicians set up milk stations where special milk formula could be purchased.[20]

In Cincinnati, Rachford introduced a milk formula as early as the summer of 1892. First, however, he had to find a safe supply of cow's milk as a basis for his prescription. Fortunately, a dairy farmer near Newport, Kentucky was willing to cooperate with Rachford following his strict standards for cleanliness in milking the cows and handling the milk afterwards. Rachford set up his milk station at Heister's Drug Store in the city where cream, boiled water and milk sugar were added to the fresh milk. The result was not only palatable but especially effective for infants with "weak digestion."[21]

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20 Rotch, p. 5. Also, Rotch, "What is Modified Milk as Distinguished from Other Preparations of Food?" Archives of Pediatrics 14: 901-904 (1897).

21 Rachford, "A Reliable Milk Supply for Babies," Lancet-Clinic, July 2, 1892, reprint, Rachford's Collected Works. Also, Lyon, Rachford, pp. 29-30.

The milk formula which Rachford devised was of course prescribed only for sick babies. It was like a medication and not intended as a substitute for breast feeding, still regarded by Rachford, Rotch and the others as the only way to feed a healthy infant. As time passed, however, Rachford became more and more convinced that growing children also benefitted from milk. Unfortunately, milk supplies in the city were at best uncertain and at worst a source of disease. To change the situation, Rachford also supervised the sale of safe whole milk from the Newport dairy at Heister's. There was, for the time being at least, little more that he could do.[22]

Then to Rachford's delight in 1906 the Cincinnati Academy of Medicine, the Board of Health and the University of Cincinnati joined together to establish a Milk Commission, a body which set standards and supervised the sale of certified milk in the city. For example, only milk from cows tested and found free of tuberculosis was eligible for certification. Once obtained, the milk was refrigerated immediately and taken to the city. There health officers examined it for bacteria, chemical

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[22] Ibid., "A Reliable Milk Supply..."

preservatives and foreign matter, certifying as safe for public consumption only the milk which met the high standards.[23]

Like most of his fellow physicians in Cincinnati, Rachford was generally satisfied with the work of the commission. Nevertheless he realized that the production of such milk was a costly endeavor and out of the reach of poor families who continued to buy untested milk from an open barrel in the grocery store. Each year Rachford grew more and more convinced that all children, regardless of their age and economic status needed to drink milk as a part of their daily diet. In an effort to provide milk for the poor, he appealed to Mary Emery in 1909 to help establish a milk station at the Children's Dispensary.[24]

Mrs. Emery had then recently demonstrated her interest in youth by donating a large sum of money to Christ Church in Cincinnati, a gift which specifically provided for a social center for boys and girls. Impressed with

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23 Reginald McGrane, The Cincinnati Doctors' Forum (Cincinnati: Academy of Medicine, 1957), pp. 203-211. Also, Lyon, Rachford, p. 32.

24 Ibid., Lyon, p. 34.

Rachford's argument that proper nutrition could help prevent disease in youngsters, Mrs. Emery established the Babies' Milk Fund with an initial gift of one hundred dollars. Her generosity allowed Rachford to sell certified milk to poor mothers for as little as three cents a pint or to give it free to those unable to pay. An eminently practical man, Rachford believed that the clinic should serve a double purpose-to provide milk at a low price and to instruct the mothers thus attracted in the proper care and nutrition of their offspring. Enthusiastic over Rachford's plans, Mrs. Emery made many subsequent donations to the Babies' Milk Fund which, among other things, permitted the pediatrician to engage a nurse to distribute the milk and educate the mothers.[25]

With Mrs. Emery's help, Rachford's plan that the Children's Dispensary and the milk fund should help to prevent sickness and death reached fruition. By 1912, the clinic's medical staff numbered thirteen physicians who gave willingly of their time to examine and treat patients. They were assisted by a full time registered

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25 Ibid., pp. 34-35. Also, First Annual Report, The Children's Clinic of the Ohio-Miami Medical College, (Cincinnati, 1912), pp. 5-6. See Lyon's biography of Rachford for an account of the clinic's origins and the letter from Charles Livingood of Dec. 20, 1909 offering Mrs. Emery's aid. (pp. 29-43).

nurse who weighed the children and checked their vital signs as well as making home visits to demonstrate the benefits of proper food preparation and general hygiene.[26]

Under Rachford's guidance the Children's Clinic worked effectively to spread the new gospel of preventive pediatrics. Not content with waiting for patients to come to him, Rachford went out into the community to extend the clinic's services. In 1912, he offered to care for babies delivered both by the Cincinnati Maternity Society and the medical college's obstetrical clinic.[27] In addition, that very same year Rachford established an infant welfare station in the basement of Christ Church. Two years later, yet another station opened in the city's east end. As Rachford hoped, more mothers came to believe that they themselves could become a viable force in preventing their children from becoming ill. The success of preventive medicine, Rachford told mothers, depended on their ability

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26 Ibid., Lyon.

27 The Cincinnati Maternity Society was -ounded to give obstetrical care to poor women in the city. No records of the society exist. Lyon says that it was one of the oldest and best known charities in the city. (p. 40).

to prepare nutritional meals and to provide a clean and properly ventilated home in which their children could grow up healthy and happy. Such an idea was revolutionary to say the least and not easily accepted. In her report for 1912, the clinic nurse wrote that, "It usually requires considerable 'urging' as the mothers cannot understand the importance of bringing a well baby to the doctor." She could have added that the idea was just as novel to a majority of the physicians.[28]

There was no doubt, however, in Rachford's mind that a child's social environment had a tremendous influence on his health and physical development. In the classroom, clinic and hospital wards, Rachford was indefatigable in his efforts to preach the gospel of preventive pediatrics. He taught his young medical students that the high rate of infant mortality then prevalent in large cities like Cincinnati was due primarily to poverty, ignorance and neglect, conditions which they could and should do something about.

Through Rachford, Mary Emery also became increasingly aware of the growing potential in pediatrics not only for curing disease but for ensuring the health of the nation's

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[28] Helen Giseke, "Outdoor Department," First Annual Report, p. 10.

youth. Mrs. Emery was in fact so impressed with the possibilities that research and teaching held for pediatrics that in the spring of 1913 she offered to endow Rachford's department with a gift of $125,000. Although grateful for her generosity, Rachford nevertheless convinced Mrs. Emery that the money should go first to endow the college's department of pathology whose work would benefit every medical specialty.[29] Appreciative of Rachford's interest in teh growth of the young medical college, President Charles Dabney urged him to accept the dean's chair when Paul Woolley resigned the position later that same year. Yet Rachford, who was reluctant to trade his work with children for administrative duties, steadfastly refused Dabney's offer.[30]

Throughout the teens, Mrs. Emery watched enthusiastically as the pediatric department progressed under Rachford's careful guidance. True to his plans the Children's Clinic and the Babies' Milk Fund took on much

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29 Lyon, Rachford, p. 57. Also, Letter, Dabney to Rachford, May 7, 1913, in which the president thanks Rachford for obtaining the endowment. Lyon Library. Also, Dreyfoos, "Dr. Benjamin K. Rachford," pp. 4-5.

30 Letter, Rachford to Dabney, June 19, 1913, Lyon Library.

larger role than simply treating sick children. The clinic's social role of advising parents in the community was clearly recognized in 1917 when it became a member of the Cincinnati Council of Social Agencies, a federation of religious charities, the Red Cross, the Better Housing League, and a myriad of other organizations, each representing the needs of some segment of the city's population. In addition, that same year the clinic moved from its old location on McMicken Ave. to newer and larger quarters at General Hospital.[31] The new arrangement brought together all aspects of the clinic's work and emphasized its ability to provide for every need of its young patients.[32]

Wishing to advance Rachford's various "activities for child welfare," Mrs. Emery offered once again in 1920 to endow the chair of pediatrics with a gift of

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31 Sixth Annual Report, Children's Clinic of the Ohio-Miami Medical College (Cincinnati, 1917), p. 5.

32 War Time Annual Reports, Seventh and Eighth of the Children's Clinic, Jan. 1, 1917 to Jan. 1, 1919 (Cincinnati, 1919), p. 3.

$250,000. This time Rachford eagerly accepted.[33] The endowment fit in nicely with his own plans. Now sixty-three years old, but not wishing to retire altogether, the pediatrician set out to find a younger man to take over the responsibilities of running the department, which had grown considerably form the single ward which Rachford had established at the old Cincinnati Hospital years earlier. With the opening of the General Hospital in 1914, the pediatric department consisted of an entire pavilion, a three story building which contained patient wards, laboratories, classrooms, offices and a rooftop garden where patients could benefit form the effects of sun and fresh air. In addition, Rachford had been given responsibility in 1911 for the hospital's new Communicable Disease Department, which consisted of three pavilions that admitted both children and adults. With such ideal facilities and Mrs. Emery's endowment, Rachford thought that it was the right time to find someone whose research abilities would attract other medical scientists

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33 Lyon, Rachford, p. 83. Also, letter Frederick C. Hicks to General Education Board, Oct. 20, 1920, General Education Board Papers, Box 706.

to the faculty and fulfill the department's potential as one of the leading departments of pediatrics in the country. For his part, Rachford planned to remain in charge of the Children's Clinic and the Babies Milk Fund Association.

Knowing exactly the type of candidate he was looking for, Rachford sought advice from John Howland, professor of pediatrics at Johns Hopkins University, who suggested a brilliant young associate, Kenneth Blackfan. Only thirty-seven years of age, Blackfan already had impressive credentials. A graduate of Albany Medical College in New York, Blackfan had served as resident pediatrician at Children's Hospital in St. Louis as well as assistant professor of pediatrics under William McKim Marriott at Washington University in St. Louis. In 1912, Blackfan accepted an appointment at Johns Hopkins where he served first as resident pediatrician, then instructor and later as associate professor of pediatrics under Howland. During World War I, Blackfan was acting head of the department during Howland's absense and proved himself a capable administrator. He also demonstrated his research abilities by publishing articles on topics such as infant nutrition, hydrocephalus, and lead poisoning in chil-

dren.[34] Blackfan received excellent recommendations from Howland and Marriot as well as William Henry Welch, dean of the medical school at Johns Hopkins, and Luther Emmet Holt, director of Babies Hospital in New York City.[35] There was also one from Abraham Flexner, secretary of the General Education Board, who wrote to Rachford that Blackfan was an "attractive and able young fellow belonging to the modern school of pediatricians," a group which believed fervently in the ability of clinical and laboratory research to advance medical science.[36]

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34 See, for example, Blackfan, K.D., "Lead Poisoning in Children," Midland Medical Journal XVII: 5-7 (Birmingham, 1918). Also, Blackfan and Dandy, W.E., "Internal Hydrocephalus," American Journal of Diseases of Children XIV: 424-443 (1917). Also, Blackfan, "Lead Poisoning in Children..." American Journal of Medical Sciences CLIII: 877-887 (1917).

35 "Professor of Pediatrics is Selected," Newspaper clipping, no source, Nov. 19, 1920, Holmes Scrapbook; also, Board of Trustees Minutes, Oct. 18, 1920.

36 Charles J. Livingood to Flexner, June 17, 1920, General Education Board Papers, Box 706.

Blackfan and Rachford got along famously. Blackfan understood Rachford's ambition to establish fulltime medicine in the department and was eager to prove himself equal to the task. He quickly accepted Rachford's offer of the chairmanship at a salary of $6,000 a year. Interestingly enough, Rachford stipulated in the contract that Blackfan would be allowed to maintain a private practice in order to supplement his income.[37] However, the politically astute Rachford, who realized that permitting a so-called fulltime, salaried professor to conduct consultations for fees could evoke a storm of criticism, publicly said nothing. He sought only to reassure his faculty that Blackfan had no intentions of reorganizing the department or of dismissing any of its members. Blackfan's appointment, he told them, "does not displace nor cause the resignation of any of the professors or instructors. It simply places a fulltime professor at the head of the department of pediatrics."[38]

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37 Board of Trustees Minutes, Oct. 18, 1920. That Blackfan was permitted to practice privately was not mentioned in the minutes.

38 "Professor of Pediatrics is Selected."

Blackfan, who was every bit as anxious as Rachford to effect a smooth transition of power, arrived in Cincinnati late in 1920. Immediately he let the faculty know that he had no intention of disrupting its work but would continue with departmental policies as established by Rachford. He sought only to establish the fulltime system of medicine in pediatrics. To this end, he brought with him Dr. Harold Higgins, a highly productive biochemist from Johns Hopkins. Appreciative of Blackfan's respect for their position, members of the faculty made every effort to cooperate with the new chairman.

Blackfan made friends easily and was quickly accepted both by his colleagues on the medical faculty and among the city's practitioners. Joining the Academy of Medicine, Blackfan never refused to serve on committees and frequently delivered papers on a variety of useful subjects pertaining to pediatrics. Acutely aware of the feelings and interests of others, Blackfan resisted the temptation to use his prestigious position to attract private patients. Unlike George Heuer, who came to Cincinnati in the fall of 1921 and quickly turned the surgery department into a hotbed of debate over the methods and merits of fulltime medicine, Blackfan desired only that fulltime medicine should work. First and foremost, Blackfan was one of a new school of academic physicians in the United States,

a relatively small cadre which cared little for worldly riches and preferred to spend their time in teaching and research, the only way, they argued, to advance the frontiers of medical knowledge.

Blackfan's attitude as well as his acceptance by the local medical profession were of utmost importance to the College of Medicine. In no instance was this clearer than in Blackfan's election as chief of the medical staff of the Children's Hospital of the Protestant Episcopal Church in March 1922. At that time plans to build a new and larger facility were just underway at Children's Hospital. From its original capacity of fifteen beds, the hospital had grown until in 1920 it had ninety beds and a staff numbering over twenty physicians.[39] As the need for the hospital's services grew, Mary Johnston, niece of William Cooper Procter, the highly successful president of Procter and Gambel, convinced her uncle to assume leadership of a campaign to build a new Children's Hospital. Miss Johnston, a longtime member of the board of directors of the hospital, argued cogently that all children and not just those who were neglected or who would suffer

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[39] Bachmeyer, p. 45.

remission of their disease in a poor home environment would benefit from care in a pediatric hospital. Middle and upper class parents, she insisted, would gladly place their children in an institution where they would receive expert medical and nursing care in place of the well-meaning but unskilled efforts of parents and family members at home.[40]

Procter found his niece's argument compelling but added a stipulation of his own, that the hospital would become an integral part of the medical college to be used both for teaching and research.[41] Consequently, in 1922 when a building committee was formed to oversee the construction of the hospital, both Arthur G. BAchmeyer, superintendent of General Hospital, and Kenneth Blackfan were asked to serve.[42] At their suggestion, six acres at

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40 Letters of William Cooper Procter, with Commentary by A.C. Denison (Cincinnati, 1957, letter of March 4, 1922. Procter was elected president of the Children's Hospital Board of trustees in 1921.

41 Letter of Procter to Mary Johnston, March 4, 1922.

42 Bachmeyer, pp. 45-46.

the corner of Elland and Bethesda Avenues immediately adjacent to the medical center were purchased. The two men also advised Procter that, in order to guarantee a close relationship between the medical college and the Children's Hospital, the professor of pediatrics should also be appointed chief of the medical staff to which only pediatric faculty members would be eligible for appointment. Moreover, they added that the hospital should cooperate closely with the Children's Clinic, the Babies Milk Fund Association and other agencies supporting child welfare in Cincinnati. Like General Hospital, Blackfan and Bachmeyer hoped that the Children's Hospital would become a medical center for the youth of the community.[43]

Besides ensuring a close working relationship between the medical college and the Children's Hospital, Blackfan was, of course, responsible for all of the teaching within his department. Within two years of his arrival, and without fuss or furor, Blackfan quietly reorganized the pediatric curriculum according to his own

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[43] "Memorial to Albert Graeme Mitchell, no author, no date, pp. 11-12. Albert Graeme Mitchell Papers, Research Foundation Library, University of Cincinnati.

ideas. Work was divided into three categories, diseases of children, infant welfare, and communicable diseases. In every instance, Blackfan taught the signs, symptoms, and treatment of diseases against a larger backdrop of physical growth and development. To Blackfan, growth was a series of progressive but separate stages which taken together comprised childhood and added up to maturity. The diseases encountered in various stages and indeed the stages themselves were suitable problems for scientific research and constituted a differentiated view of the maturation process.[44]

In addition to his teaching and obvious administrative talents, Blackfan was also interested in clinical research, specifically the problems of allergic reactions, nephritis, and nephrosis, interests which he pursued

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44 University of Cincinnati, Announcement of the College of Medicine, 1921-1922 (Cincinnati, 1921), pp. 74-75.

throughout his career.[45] Under his direction, many of the pediatric faculty members also conducted clinical research. The results of their efforts became apparent in the numerous cases which they presented before the Central States Pediatric Society which met in Cincinnati in the fall of 1922.[46]

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45 See, for example, K.D. Blackfan, "The Treatment of Hypersensitiveness to Eggs," Cincinnati Journal of Medicine 4: 228-231 (July, 1923). Also, Blackfan and C.A. Mills, "The Effect of Two Percent Magnesium Sulfate Solution on the Cerebral Symptoms of Acute Nephritis," Transactions of the American Pediatric Society XXXV: 197-204 (1923).

46 "Delegates Assemble for Session," Cincinnati Enquirer, Oct. 17, 1922; "Child Deaths Waning in the U.S., Physicians Say," Commercial-Tribune, Oct. 17, 1922; "First Session Held," Enquirer, Oct. 18, 1922, all in Holmes Scrapbook.

To say the least, Rachford was delighted with his choice of Blackfan who was so adroit at leadership and at the same time genuinely liked by his colleagues. Unfortunately, Rachford's delight in his young protege was cut short in 1923 when Blackfan resigned to accept the chair of pediatrics at Harvard. Publicly, Blackfan declared his reluctance to leave Cincinnati and affirmed his faith in the future of the medical college.[47] Privately, however, Blackfan told another story. President Hicks and Dean Page, he charged, had failed miserably to fill the shoes of Dabney and Holmes. Page, Blackfan told friends bitterly, was hopelessly inefficient and had caused the medical college to lose out on many opportunities. With him at the helm, the school would continue to founder hoplessly. Hicks, he added, was no more than a caretaker president.[48]

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47 "Resignation Announced at Varsity: Dr. K.D. Blackfan Accepts Offer From Harvard," no source, June 16, 1923, Holmes Scrapbook.

48 Letter, Rachford to President Hicks, June 21, 1923, Victor Greenebaum Papers, Lyon Library, University of Cincinnati. See also, "A Crisis at the Medical College," no source, June, 1923, Holmes Scrapbook.

Rachford, who was away for the summer, was devastated when he received word from Hicks that Blackfan had resigned. Angrily Rachford blamed both the university president and Dean Page for the loss of the eminent young pediatrician. Blackfan's loss, Rachford charged, would not only hurt the medical college but would "retard the growth" of the entire university for at least a decade to come. Because of Hick's fumbling ineptitude, one of the university's best faculty members was gone, a loss the Geberal Education Board and the Carnegie Foundation were certain to notice. In the face of such administrative bumbling, the foundations could hardly be expected to offer financial aid to the college of medicine or any other department for that matter. What was left, Rachford finished in despair, but a future as a "small provincial school with a narrow outlook and a very narrow field of usefulness."[49]

From his summer home in Maine, Rachford considered

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[49] Ibid., Rachford to Hicks.

Cincinnati's bleak future. Nothing, it seemed, could be done to alter it. But slowly Rachford's despair dimished, replaced by a stubborn resolve not to let Hicks and Page wreck the department to which he had given his life. Breaking his self-imposed silence, Rachford let Hicks know that in order to restore his good will, the president would have to give him a free hand in choosing Blackfan's successor. Hicks, embarrassed by the events which proved him so powerless, immediately acceeded to Rachford's demand.[50]

By mid-September, Rachford's search for a new chairman of pediatrics was in full swing. Among others, he sought advice from Abraham Flexner, attempting in the process to restore the school's good name with at least one of the national foundations. Rachford wrote to the secretary carefully outlining details of the position even to admitting that the incumbent would be allowed "to supplement his income by consultation." [51] Instead he encouraged

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[50] Letter, Rachford to Flexner, Sept. 24, 1923, Box 706, General Education Board Papers.

[51] Letter, Rachford to Flexner, Sept. 18, 1923, Box 706, General Education Board Papers.

Rachford that the college of medicine had "the possibility of becomming something more than a good local institution and advised him to look outside of the department for a man capable of making the best use of the "splendid facilities" in Cincinnati. Only then, he noted, could the medical college gain the "respect and sympathy of the outside world." This said, Flexner next suggested that Rachford consider two men, Alfred Hess, professor of pediatrics at Bellevue Medical College in New York City, and Fritz Talbot of Harvard, both of whom he described as "fertile (and) productive" researchers and teachers. His suggestions, Flexner reminded Rachford, were just that and should in no way be considered the advice of the General Education Board. To emphasize that he wrote just as a friend, Flexner pointed out that he had not used official stationary.[52] Nevertheless, Rachford's spirits were buyoed by the evidence of Flexner's continued interest in the medical college

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[52] Letter, Flexner to Rachford, Sept. 27, 1923, Box 706, General Education Board Papers,

and his belief in its future.

As the autumn of 1923 approached, Rachford's immediate problem became the selection of an acting department head, one who could effectively direct the department's work while the search for a permanent head continued. Rachford chose Harold Higgins, whom Blackfan brought with him from Johns Hopkins a few years earlier. In part Rachford's choice was dictated by the fact that he was fearful of losing Higgins, a talented scientist and a decided asset to the department. However, Rachford never considered Higgins, an austere man who related poorly to his colleagues, for the permanent position.[53] A few years later in 1927, Higgins followed his former chief to Harvard.[54]

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[53] "Rare books Given to University: Dr. H.L. Higgins Takes Place of Dr. Kenneth Blackfan," Public Information Office Scrapbook, 1923-1924, no date, no source. Special Collections, University of Cincinnati Libraries.

[54] There is evidence that Higgins hoped for the appointment and perhaps was disappointed to the point of resigning when that did not happen.

Determined to find an outside man to head the pediatric department, Rachford continued his search. Besides considering the secretary's recommendations, Rachford also received inquiries from others, among them C.C. Grulee, head of the pediatric department at Rush Medical College, Rood Taylor, assistant professor of pediatrics at the University of Minnesota and Albert Graeme Mitchell, associate professor of pediatrics at the University of Pennsylvania, who actively sought the position and quickly emerged as the front runner.

A graduate of the University of Pennsylvania, Mitchell studied pediatrics at Harvard before returning to his alma mater to teach. There he co-edited a popular textbook, Diseases of Infants and Children with J.P. Crozer Griffith, his former mentor. He was also in charge of the Children's Clinic of the Presbyterian Hospital under Samuel McClintock Hammil, chief of pediatrics. Although Mitchell's relationship with Griffith was distant and formal, he was close to Hammil whom he addressed as "Uncle Sam." [55] Hammil wrote a strong recommendation for

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[55] For a full biography of Mitchell, see John F. Cronin and Robert A. Lyon, Albert Graeme Mitchell (Cincinnati, 1964).

his protege, recalling that Mitchell "surrounded himself with a group of five promising younger men who succeeded for the first time...in building up an efficient clinic." Graeme Mitchell, Hammil declared, was the "one man on the staff who is able to get men to work under him."[56]

To Rachford, Mitchell was ideally suited to carry on the work of putting the pediatric department on the fulltime system. Not only was Mitchell committed to research, he was a proven administrator, a critical factor in view of the fact that Cincinnati's pediatric facilities were about to be expanded. To Rachford's pleasure, Mitchell, on hearing of his selection from Dean Page in January 1924 wrote immediately to the older man pledging whole-hearted loyalty. "It is easy to realize your deep personal interest in the pediatric situation in

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[56] Letter, Hamill to Rachford, Oct. 20, 1923, Mitchell Papers.

Cincinnati," Mitchell told Rachford, "and my hope will be to fill the position with which you have honored me that you will not regret your choice."[57]

Never a moment disappointed, Rachford had every reason to be gratified by his choice of Mitchell. An affable man with a wit which disarmed his most vociferous critics, Mitchell was quickly accepted by members of the pediatric faculty, his colleagues in the medical college and members of the Academy of Medicine as well. He went out of his way to consult with Harold Higgins and to include him in decisions he made in order to placate the former acting chairman and retain him in the department.[58] In Mitchell, Higgins and the rest of his associates found a man who listened attentively, asked perceptive questions and actively sought the advice of others in regard both to

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57 Letter, Mitchell to Rachford, Feb. 6, 1924, Mitchell Papers.

58 See replies to Mitchell's letters by Higgins, July 24, 1924, July 30, 1924, and Aug. 4, 1924. All in Mitchell Papers.

decisions affecting the department and his role on the building committee of the new Children's Hospital.[59] Not only with Rachford but with Procter as well, Mitchell quickly formed close friendships in which he assumed a father-son relationship with both of the old men. Realizing the great opportunity that Procter had given him, Mitchell was determined to do everything he could to fulfill the philanthropist's hope that the hospital would "add materially to the prestige and distinction" of the College of Medicine.[60]

As he had expected, however, Mitchell's new position was by no means an easy one. Frequently he found himself frustrated by the constraints of time and ended nearly

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59 Waldo Nelson, "Pediatric Profiles: A. Graeme Mitchell, 1889-1941," The Journal of Pediatrics, no date, pp. 520-528, reprint, Mitchell Papers.

60 U.C. Board of trustees Minutes, July 14, 1925. In his letters, Procter indicated that there were problems working out the agreement but does not explain at any length. See a letter of June 3, 1925 in which he says that he met with Bachmeyer and speaks of the importance of the hospital's relationship to the medical school At that time, he was not satisfied that college officials were entirely convinced of the need for a close relationship. In Jan., 1926 he wrote that the medical college had to accept responsibility for the hospital. All in Procter's Letters.

every day with stacks of notes for research projects still untouched on his desk. Still he was determined, as he said, "to make Cincinnati one of these places-of which there are now too few-from which the solution of constructive and helpful Pediatric work will succeed."[61] He hoped, for example, to be able to comply with a request from Appleton and Company, a leading publisher of pediatric monographs, to do a book about "the metabolism of infancy and childhood, including the internal secretory system." Finding that he himself lacked the necessary time, Mitchell asked Higgins if he would be interested, reminding him that to be represented in a series with other pediatric authorities like Henry T. Helmholz, head of pediatrics at the Mayo Clinic, and Philip C. Jeans, professor of pediatrics at the University of Iowa would not only be

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61 Letters, Mitchell to Rachford, April 7, 1924 and Mitchell to Higgins, April 7, 1924, Mitchell Papers.

personally rewarding but would add considerably to the department's prestige.[62] Mitchell was disappointed when Higgins responded that he simply could not fine the necessary time for the project unless sufficient funds could be made available to free him of teaching responsibilities.[63]

In despair, Mitchell turned to his former teacher and friend, Samuel McClintock Hamill, for encouragement. Hamill urged him not to give up the search for research funds. Someone engaged in fulltime research, he wrote, would attract additional funds by contributing to the world's knowledge of childhood nutrition and the effects of the environment on the child's health and conduct.[64]

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62 Ibid.

63 Ibid, Mitchell to Rachford.

64 Letters, Hamill to Mitchell, Feb. 17, 1924 and Sept. 28, 1925, Mitchell Papers.

In reply, Mitchell observed that the subject of research remained a "sore spot" and the "really weak part" of his organization. He added, however, that six members of the resident staff at General Hospital had begun limited investigative work in addition to their already crowded daily routine of patient rounds, clinic examinations and teaching assignments.[65]

In his early years at U.C., most of Mitchell's time was taken up with teaching. Under his direction, pediatric instruction came to occupy a prominent place in the undergraduate medical curriculum. In this he was in direct opposition to Fred Zappfe, secretary of the Association of American Medical Colleges, who believed fervently that pediatrics belonged to medicine as a subspecialty and consequently tried, although in vain, to force schools to decrease the number of hours of pediatric instruction. Pediatrics, Mitchell argued cogently, was important to undergraduates because almost one third of the general practitioner's time was spent treating infants and children. Even most specialists, he pointed out, came into

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[65] Letter, Mitchell to Hamill, Oct. 5, 1925, Mitchell Papers.

contact with children frequently in the course of their practice. He noted finally that undergraduate students who studied pediatrics might later become specialists and help to advance knowledge of the subject. For those stoudents especially interested in pediatrics, Mitchell established a club limited to twenty-five members who discussed interesting case histories. Always one to encourage research, Mitchell found room for members to work in the department's laboratories.[66]

Among other educational innovations, Mitchell drastically cut the numbers of lectures on childhood diseases. Instead seniors learned pediatrics by direct contact with patients. Both on the wards and in the hospital's clinics, professors assigned students patients whom they examined even to the completion of laboratory tests. Later students presented their cases in class explaining and defending the diagnosis and suggesting sppropriate treatment. In college clinics, students were responsible for conducting

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[66] Mitchell and Greenebaum, "The Pediatric Course, University of Cincinnati," Read before the Association of American Teachers of Diseases of Children, April 20, 1926. Copy in Mitchell Papers.

well-baby checkups and advising mothers on matters of hygiene and nutrition. "It is here," Mitchell wrote, "that very definite lessons connected with breast feeding, rickets prevention, the importance of community health problems, and the place of child welfare work can be impressed upon the student." Regardless of what Fred Zappfe might think, Mitchell was doggedly persistent in informing undergraduate students of the responsibilities which all practitioners had toward their young patients.[67]

Like Heuer before him, Mitchell was also dedicated to building a graduate program in his department. He devised a pyramidal residency in which the student's work and responsibilities increased each year. First year residents rotated every three months from preventive pediatrics and assignment at the Children's Clinic to Children's Hospital and later to the Communicable Disease pavilions at General Hospital. Second year residents followed the same basic rotation but in addition were given teaching assignments and were also responsible for developing re-

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67 Ibid.

search projects. Graduate students also attended eight seminars every year at which one of them presented a case before his peers and the pediatric faculty. In their third and final year, residents were responsible for directing the work of their juniors as well as completing their research projects, following patients in the hospital and teaching classes. At the end of the program, the degree, Master of Arts in Pediatrics was awarded to those whose work met Mitchell's rigid criteria.[68]

The high quality of both undergraduate teaching and the residency program brought credit to Mitchell and the pediatric faculty. And, with the opening of Children's Hospital on Nov. 21, 1926, researchers, pediatricians and residents across the country suddenly became aware of the new opportunities for work in Cincinnati. A seemingly endless stream of medical practitioners, politicians and civic leaders alike toured the hospital, proclaiming it one of the nation's finest institutions for children.[69]

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[68] Ibid.

[69] See, for example, the letter of Dr. Horace Jenks of Philadelphia to Mitchell, May 12, 1927 in which Jenks proclaimed that the new facility was "the finest hospital in America." Mitchell Papers.

The hospital featured the newest equipment in its x-ray department, laboratories and dietary kitchen. Its operating suite incorporated the latest ideas in planning and efficiency. Parents and their children were put at ease by the cheerful colors of the rooms and wards and the plant-filled solariums, many of which were enhanced by fountains. To entertain the small patients, there were playrooms on each floor filled with toys to attract the attention of all but the sickest patients. Throughout the hospital, which had accomodations for two hundred, an atmosphere of friendliness and efficiency prevailed. The setting itself, Cincinnati's newspapers declared, would go a long way in restoring a youngster's health.[70]

No one could deny that Children's Hospital was truly a splendid institution. Still Mitchell knew that in order to develop its potential funds were needed to support research. Approaching Procter, who was delighted with the

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70 Cronin and Lyon, pp. 30-35.

hospital he'd helped to build, Mitchell found a sympathetic ear.[71] At the end of Oct., 1927, Mitchell wrote to Hamill that soon he would tell him "some extremely interesting news..."[72] A few weeks later, he wrote Griffith saying, "I am almost certain that I am going to get an endowment which will be bigger than any other department in the country has."[73] Shortly he wrote to J. C. Gittings, professor of pediatrics at the University of Pennsylvania, telling him, "Between you and me, I have every reason to think that I am going to get about two and a half million dollars." Mitchell elaborated his plans for spending the money. "A half million I expect to spend in a new building which will house among other things, laboratories and the rest of

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71 "Memorial to Albert Graeme Mitchell," no author, no date, Mitchell Papers.

72 Letter, Mitchell to Hamill, Oct. 24, 1927, Mitchell Papers.

73 Letter, Mitchell to Griffith, Nov. 12, 1927, Mitchell Papers.

the money," he concluded, "will be saved for endowment." Mitchell added that in the near future, he would be looking for a "rather large group of men," interested in going into fulltime medicine to devote themselves to clinical and laboratory research.[74]

On Jan. 5, 1928, Cincinnati's newspapers reported exuberantly that, as Mitchell had predicted, William Cooper Procter had generously given two and a half million dollars to establish the Children's Hospital Research Foundation. Procter's gift, Mitchell told reporters, would enable researchers to "round out the work of the Children's Hospital in caring for sick children by placing the study of disease in the larger context of the social environmnet." Under Mitchell's direction, the research foundation would devote its energy to advancing the knowledge of preventive medicine. "Even though we must admit a considerable degree of ignorance about many medical problems," he wrote a few years later, "it must be accepted that if there were universally applied in practice, our present knowledge of preventive measures,

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74 Letters, Mitchell to Gittings, Nov. 22, 1927 and Nov. 30, 1927, Mitchell Papers.

a tremendous amount of disease and suffering could be eliminated."[75]

To Mitchell, the idea of prevention meant much more than measures of cleanliness and general hygiene thought to be sufficient to control disease at the beginning of the century. For example, nutrition which once meant supplying a healthy suply of milk now involved defining and meeting the needs of tissue and the maintenance of the body's cells. Modern principles of nutrition derived from new knowledge of vitamins and the role of protein , carbohydrates, and fats in the body. The satisfaciton of a child's nutritional requirements, Mitchell believed, would go a long way towards promoting his growth and physical development and preventing disease.[76]

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75 "Children's Hospital to Receive $2,500,000 as Endowment from Col. W.C. Procter: Institution is to be Greatest in World," Enquirer, Jan. 5, 1928, Christian R. Holmes Scrapbook. See also "The Practice of Preventive Medicine," typed manuscript, Mitchell Papers.

76 Mitchell and Greenebaum, "The Pediatric Course." Also, "The Practice of Preventive Medicine.

Besides those involving nutrition, Mitchell planned for the laboratory to conduct other "social service studies" and "child welfare investigations" centered on the child in his social environment which was so largely responsible for retarding or promoting his well-bieng.[77]

In 1928, even before the research foundation's new quarters were completed, Mitchell invited Dr. George Guest to head the chemistry division of the foundation. Guest, who graduated from the College of Medicine in 1922, spent a year studying pathology at U.C. before going abroad to study at the Pasteur Institute in Brussels for two years. After that he returned to the United States to complete a research residency under James Gamble and Blackfan at Harvard where he studied the chemistry of metabolism. Together with a medical advisor and Stanley Matthews, the architect, Guest and Mitchell toured other research facilities in Chicago, St. Louis, Ann Arbor, Detroit, Rochester and New York City before settling

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77 "Cincinnati's New Hospital Draws Attention of Entire World," Times-Star, May 15, 1931, p.8.

on the exact design of the Research Foundation.[78]

Before he selected a director for the foundation, Mitchell sought advice from Simon Flexner, director of the Rockefeller Institute, who urged him to "get the very best man in the country, someone like D.D. Van Slyke... You have," Flexner continued, "an opportunity to develop in Cincinnati for pediatric research, a research institution comparable to the Hospital of the Rockefeller Institute."[79] To Mitchell's disappointment, Van Slyke, an eminent biochemist at the Rockefeller Institute, declined his offer. Hosever, a close second choice, Glenn Cullen, professor of biochemistry at Vanderbilt University and a former associate of Van Slyke's at the Rockefeller Institute, was interested in the position. Under Cullen's direction, Guest organized the chemical laboratories. Later, Dr. Merlin Cooper, a U.C. faculty member, who held a master's degree in bacteriology as well as an M.D., was appointed to head the division of bacteriology.

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[78] Letter, Mitchell to Dr. Frank H. Lamb, June 28, 1928, Mitchell Papers.

[79] Letter, A. Baird Hastings to John F. Cronin, August 16, 1960, Mitchell Papers.

In May 1931, the Research Foundation was dedicated. One Cincinnati newspaper exalted that, "Cincinnati now possesses the finest facilities anywhwere for studying child health and for advancing scientific knowledge of the cause and suffering of untold numbers of little children."[80] However, easing the suffering of others was by no means an easy matter. In fact, just deciding which problems to study presented Mitchell and the others with major difficulties. They knew that the reputation of the Research Foundation and the usefulness of its work depended on the ability of the staff to select and solve timely problems.

For a few years, the group sought advice informally from colleagues at other research institutes and followed their own best instincts. In 1937, Mitchell decided and the others agreed that the foundation ought to have an advisory committee made up of a group of scientists each with his own interests and each affiliated with a different institution. With the help of the Advisory Council as it came to be known, the staff of the foundation met annually to review its work, evaluate its progress and to decide on the nature and course of future projects. The council was composed of some of the country's most prominent

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80 "Cincinnati's New Hospital..."

medical scientists including A. Baird Hastings, research professor of biochemistry at the University of Chicago and director of the Lasker Foundation for Medical Research there; A.N. Richards, professor of pharmacy, University of Pennsylvania; O.T. Avery of the Hospital of the Rockefeller Institute for Medical Research; Dr. Ernest Goodpasture, professor of pathology at Vanderbilt University; and Rustin McIntosh, professor of pediatrics at the College of Physicians and Surgeons, Columbia University and the director of the Babies Hospital.[81]

The Advisory Council, as Mitchell expected, proved helpful to Cullen and his staff. Dr. Hastings, for example, later recalled that the council advised Cullen and Mitchell on matters of both scientific and administrative concern. In particular, Hastings noted, that the council played and active role in helping to select Dr. Albert Sabin to head the section of microbiology. The council also

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[81] Letters, Hastings to Cronin, Aug. 16, 1960; A.N. Richards to Cronin, Sept. 12, 1960; McIntosh to Cronin, Sept. 8, 1960, Mitchell Papers.

helped to shore up Mitchell's confidence.[82] Mitchell, Rustin McIntosh recalled, "harbored some genuine misgivings about his own ability to initiate and stimulate pediatric research." He relied heavily on the judgments of the council "in sizing up potential investigators and in evaluating the lines of work."[83]

Whatever the exact nature of the relationship, the marriage between the Research Foundation and its Advisory Council proved fruitful. An early series of studies, for example, focused on tuberculosis, diphtheria and scarlet fever. Robert Lyon, then a young professor, studied the effects of chicken pox on children suffering from heart disease. George Guest created a simple kit containing equipment so that diabetic children could test their own urine and thus become more independent. He also conducted a diabetic camp where children learned, to their delight, that, despite their disease, they too could

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82 Ibid., Hastings to Cronin.

83 McIntosh to Cronin.

play games and enjoy sports like other children.[84]

Guest, Mitchell, Cullen and the others at the Research Foundation pursued research in the interests of child welfare. Earlier, Rachford too worked toward a similar goal and shared a common belief with the younger men that proper nutrition was the sine qua non of preventive pediatrics. However, Rachford, who looked to the environment as the source of trouble, differed significantly from the others in methodology. For Rachford, cleanliness was critical in ensuring a safe supply of milk, properly prepared food and a healthy home. On the other hand, Blackfan, Mitchell and the others looked to the body and its reaction to individual diseases as well as its specific needs in terms of fats, proteins, carbohydrates, and vitamins. In their new orientation toward the body itself, pediatricians did not ignore the child's environment but rather depended on social workers and others to supervise

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84 For the full range of studies conducted, see Children's Hospital Research Foundation, Vols. I-IV, Lyon Library.

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Aside from these basic differences in approach, RAchford, Blackfan and Mitchell all viewed the child as unique with little or nothing in common with the adult. Although Blackfan and Mitchell's view of the maturation process was more highly differentiated than Rachford's, all regarded physical development as a progressive process to be promoted by the pediatrician. The idea that the child was unique and in need of distinctive medical treatment marked the origins of pediatrics as a specialty.

In its development and acceptance pediatrics depended on various people who were committed to the new field and capable of attracting the interest of philanthropists to advance their work. In Cincinnati the specialty of pediatrics was established by Frederick Forchheimer and flourished under Benjamin K. Rachford, who succeeded in convincing Mary Emery of the merits of pprventive pediatrics. Fortunately for Rachford and his small patients, another local philanthropist, William Cooper Procter, was also drawn to the cause. In this way, pediatrics developed in Cincinnati as a community effort with only encouragement and advice from Abraham Flexner and the General Education Board.

Yet in the end, money alone could not guarantee the success of fulltime medicine in pediatrics. To achieve

positive goals in teaching and research required the devotion of men who cared not for money but only for advancing the frontiers of medical science. Both Kenneth Blackfan and Graeme Mitchell, under whose direction full-time medicine became a success in the department of pediatrics, were of this modern school of academic physicians. Because of them and their benefactors, excellence in pediatric care and achievement in pediatric research became a reality in Cincinnati.

CHAPTER VIII

FULL-TIME MEDICINE IN THE KETTERING LABORATORY OF THE UNIVERSITY OF CINCINNATI: FROM POLICING THE FACTORY TO CONTROLLING THE INDUSTRIAL ENVIRONMENT, 1920-1945

By the twenties clinical research had come to be recognized as an essential component in medical education at the University of Cincinnati. George Heuer's belief that research was the very essence of full-time medicine was shared by other members of the medical faculty who were also convinced that professors ought to be actively involved in extending the knowledge of the nature of disease as well as in teaching medical students. The focus both in clinical research and medical education had shifted from studies of "individual instances of disease" to an examination of the human body as a living organism and how it changed in disease. This shift in emphasis was apparent in the medical college's announcement of courses in 1919. Until that time the curriculum had been clearly divided between laboratory and clinical work. Now, however, second year students began attending clinical lectures in order that they might begin to relate facts of physiology and pathology to clinical medicine.[1]

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[1] University of Cincinnati, Announcement of Courses College of Medicine, 1912-1913 (Cincinnati, 1912), p. 23.

Perhaps the leading exponent of this new approach in the medical school was Dr. Martin Fischer, who joined the faculty as professor of physiology in 1910. Fischer, who had graduated from the Rush Medical College and had enjoyed a term of study in physiology and pathology in some of the leading laboratories in Munich, Vienna and Berlin before embarking on a teaching career, was thoroughly imbued with the utility of research in the basic sciences (chemistry, physics and physiology) for the solution of long term problems in medicine.

In 1909, when he was still teaching pathology at the Medical College of Oakland, California, Fischer won a prize given by the College of Physicians of Philadelphia for his essay, Oedema, in which he investigated a problem whose nature had long eluded physicians. The basic question in edema, he argued, was not how tissues held an abnormal amount of fluid, but rather, "why protoplasm holds any water at all, and why it holds under normal circumstances so nearly constant an amount." In the end, Fischer concluded that edema occurred whenever there was a change in the osmotic pressure of the tissue which resulted in a greater absorption of fluid.[2]

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[2]Martin H. Fischer, Oedema (Philadelphia, 1910), p. 457. The essay won the Nathan Lewis Hatfield Prize in 1909 given by the College of Physicians of Philadelphia.

Fischer was fascinated with osmotic pressure, a "physico-chemical force" as he called it, and its role in edema. His interest in this phenomenon in time led him to research in colloid chemistry, the study of gelatinous substances which, rather than diffusing readily like their crystalloid counterparts, such as sugar and salt, tend to remain suspended inliquid. First described by the Englishman Thomas Graham in 1861, the theory of colloid chemistry was expounded forty years later by a German scientist, Wolfgang Ostwald. And it was none other than Fischer himself who was responsible for acquainting Americans with Ostwald's ideas. In 1915, Fischer published a translation of the third German edition of A Handbook of Colloid Chemistry. In the preface he explained the significance of this new branch of study.[3]

> It happens, he wrote, that nature has chosen the colloid form in which to show her face. Crystalloid is the exception, colloid behavior the rule in the cosmos. Living matter whether of plants or animals, and under normal or pathological conditions, is chemistry in a colloid matrix; whence colloid-chemistry comes to concern every botanist and zoologist, the physiologist, the pathologist and the practical man in medicine and surgery.[4]

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[3]Wolfgang Ostwald, A Handbook of Colloid Chemistry: The Recognition of Colloids, the Theory of Colloids and Their General Physico-Chemical Properties, 2nd English Edition, 3rd Edition (Philadelphia: P. Blakistens Son and Co., 1919), pp. v-vi, trans. Martin H. Fischer. See also, Jacques Loeb, Proteins and the Theory of Colloid Behavior (New York: McGraw Hill, 1922).

[4]Ibid., Ostwald.

Two years later Fischer developed his thesis in a book titled, Fats and Fatty Degeneration, in which he argued that through the study of colloid chemistry doctors could understand better the physiological forces at work in pathological processes, forces which, like osmotic pressure, affected every organ and all the tissues in the body. Only then, Fischer maintained, could the physician evaluate the patient as a whole and recognize the full extent of damage due to disease. Based on such study the physician could intervene in the so-called "territory of altered function." If he found that the damage were irreversible it was his task to make the "irreparable more tolerable" for his patient, prescribing proper drugs and advising him on diet and his mode of daily life. Equally as important, the physician had to inform other patients how to avoid disease. This, Fischer concluded, was what the new medicine of prevention was all about.[5]

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[5]Martin H. Fischer, Fats and Fatty Degeneration: A Physico-Chemical Study of Emulsions and the Normal and Abnormal Distribution of Fat in Protoplasm (New York: John Wiley and Sons, Inc., 1917). See also H. Bechhold, Colloids in Biology and Medicine, trans., Jesse G. M. Bullowa, A.B., M.D. (New York: D. Van Nostrand Co., 1919) for a fuller explanation of the implications which colloid chemistry had for medicine. See also Jacques Loeb, The Organism as a Whole from a Physico-Chemical Viewpoint (New York: G. P. Putnam's Sons, The Knickerbocker Press, 1916). Loeb argues that the laws of physics and chemistry could explain development, adaptation and finally death and dissolution of the organism. He stressed the interrelatedness of the body parts and the influence of the whole over the parts be it star fish or a human body.

Fischer's philosophy dovetailed neatly with Christian B. Holmes' deepening interest in preventive medicine. Holmes had long believed that basic research held the key to understanding and ultimately preventing illnesses which plagued mankind. In the spring of 1917 as the nation experienced the first shock of war, Holmes publicly expressed his conviction that the promotion of the health of workers could go a long way toward stabilizing society and restoring some semblance of order in the country.

Holmes' view that society should take responsibility for the health of its workers was shared by others in the Cincinnati medical community, and more especially by Dr. Otto P. Geier, who was primarily responsible for supervising medical care for workers at the Cincinnati Milling and Machine Company, a firm which his family owned. Geier, who was the first chairman of the A.M.A.'s Section on Preventive Medicine in 1915, and a year later helped establish the American Association of Industrial Physicians and Surgeons, an organization which sought to bring leading physicians in industrial medicine together with leading public health authorities in order to deal with the burgeoning problems of the diseases and accidents that afflicted workers, performed a similar function locally in Cincinnati. With enthusiasm for the possibilities

industrial hygiene held both for workers' welfare and industrial production, Geier, in cooperation with his brother Fred, organized a group of Cincinnati industrialists and drew up a plan for the establishment of a department of Industrial Hygiene and Public Health in the College of Medicine at the University of Cincinnati. While Geier and his industrial supporters clearly recognized the ill effects that disease and worker disability had on "commercial life, the industries and the community" in general, such understanding was by no means the only reason for establishing a Department of Industrial Hygiene and Public Health. Equally compelling was their perception that such a department could also serve to prevent a wave of radicalism among workers such as Russia, then in the throes of revolution, was experiencing. To achieve its goal, the committee with the help of the university proposed:

> To provide facilities and instruction for graduate and undergraduate medical students in industrial medicine and public health to be taught in cooperation with the industries and the local public health agencies leading to degrees and certificates in industrial medicine and public health.[6]

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[6]Board of Trustees Minutes, May 6, 1919. The subject of workers' health received a good deal of attention in the mid teens. In 1916, the American Association of Industrial Physicians and Surgeons was organized in Detroit "to foster the study and discussions of the problems peculiar to the practice of industrial medicine." In March 1917, Dean Holmes explained that medicine was no longer merely the

The program to carry out these broad purposes was based primarily in on-the-job training. Students, Geier and his associates hoped, would come to appreciate industrial conditions by making studies of factories and reporting their findings to managers and owners for correction. Later in the program, they would actually work with company doctors in order to learn how to establish and direct an employee health department. In addition, Geier and his colleagues planned for a special series of lectures on industrial relations to inform managers of their responsibilities in regard to the health and welfare of their work force. To help companies more directly, the department was to do "extension work," which included the establishment of medical departments as well as sanitary surveys of factories.[7]

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business of curing disease but in preserving health through prevention and ought to come into closer contact with the great social and industrial questions of the day. (Enquirer, March 11, 1917). See also "A Plan for the Establishment of a Department of Industrial Medicine and Public Health in the College of Medicine, University of Cincinnati, p. 4, presented by the Committee, Fred A. Geier, Chiarman. General Education Board Papers, Box 706. The American Association of Industrial Physicians and Surgeons brought together men like Joseph W. Schereschewsky, its first president and later head of the federal office of Industrial Hygiene, and Harry Mock, who published Industrial Medicine and Surgery in 1919 which became a standard work on the topic. (Philadelphia: W. B. Saunders Co., 1919).

[7]Ibid., "A Plan for the Establishment of a Department of Industrial Medicine and Public Health."

Early in the spring of 1919, Geier's committee presented its plan to Dean Holmes with an offer to support it for a period of five years with an endowment of $20,000. Several weeks later Holmes recommended the creation of such a department according to the committee's plans.[8]

The department envisioned by Geier's committee was at the time one of the most ambitious undertakings in industrial medicine in the United States. It was, for example, much more elaborate than the course in Industrial Hygiene which Harvard established in 1918 to educate company doctors. The Harvard course was specifically designed to counsel company physicians and no attempt was made to supervise or improve the health of employees directly.[9]

Because the new Department of Industrial Medicine and Public Health was unique and another indication of the medical school's commitment to innovative research, Dabney was anxious that Abraham Flexner be made aware of the experiment in Cincinnati. Upon Holmes' approval of the department, Dabney sent the secretary a copy of the plan and kept him informed of the department's organization. In May 1919, for example, he wrote to Flexner that Dr. Carey

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[8]Board of Trustees Minutes, May 6, 1919.

[9]For a description of Harvard's course, see Meck, pp. 78-79.

McCord, formerly in charge of sanitation and disease prevention at Camp Sherman, had been appointed director of the department on Holmes' recommendation. McCord was charged, he told Flexner, with developing the department according to the plan's guidelines and with obtaining additional funds for it as well.[10]

During the first year of the department's existence, McCord and John Watkins, M.D., director of the department's Industrial Medicine Division, visited factories in order to study actual working conditions. Nothing, however, was undertaken in regard to the plan's educational objectives.[11] Unfortunately, even before McCord and Watkins realized their limited goals, an economic recession occurred and the financial support of the city's industrialists evaporated. In February 1920, Dr. Geier reported to the university's

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[10]Dabney to Flexner, May 7, 1919, General Education Board Papers, Box 706.

[11]See, for example, McCord's Report for Oct. 1919, which was submitted to the organizing committee of the new department, Drs. Friedlander and Wherry and Geier, a copy of which was sent to Flexner. Some thirteen companies were visited including Cincinnati Milling Machine, Worthington Pump, American Tool Works, and Globe-Warnicke and Procter and Gamble. McCord thought it wise "to prosecute work among the industries rather than concentrate on student training. Therefore although the original plan called for lectures and laboratory work on a wide range of subjects, for lack of money and personnel this goal was never realized. (General Education Board Papers, Box 706.)

board of trustees that the campaign to collect pledges was failing. Several months later it collapsed entirely.[12]

The idea of preventive medicine, however, did not die. Soon after Dean Holmes' death in 1920, his mother-in-law and confidante, Henrietta Fleischmann, established a Department of Preventive Medicine in his memory.[13] The new department was actually a subdepartment within Bacteriology and Hygiene and was housed in the Pathologic Institute. Actually it was appropriate that the new department was associated with the bacteriology department, then one of the departments in the medical school most closely identified with preventive medicine. Preventive medicine, whether in public health or industry, involved many of the same principles and measures. For example, providing for sanitary conditions in rest rooms and kitchens or clean drinking water or safe lighting and adequate ventilation not only could help control and eliminate a number of infectious diseases but a variety of chronic diseases of

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[12]Board of Trustees Minutes, February 3, 1920. In the Ohio State Medical Journal, June 1921 (17:386-89), Dr. Otto Geier acknowledged that industry simply did not see how it dominated American life. It failed to sense its responsibility to society. Its leaders failed to realize "that the force and character of industrial life pulsates throughout the community . . ."

[13]Board of Trustees Minutes, March 11, 1920 and May 4, 1920.

the respiratory, cardiovascular and various systems associated with the work place as well.

Although the idea of preventive medicine was gaining increasing numbers of adherents during the nineteen twenties, the usefulness of the embryonic field of toxicology, the identification of harmful substances usually encountered occupationally and the body's physiological response to them, was not yet clearly understood or appreciated. In 1920, for example, the medical school of the University of Cincinnati had no plans to develop such a unit within the department of preventive medicine. Ultimately the new discipline was established rather abruptly and by chance as a response to a serious industrial accident involving lead poisoning, one whose consequences demanded immediate action.

The medical school initially became aware of the problem in May of 1924, when Thomas Midgley, Jr., a chemist at the General Motors Research Corporation, then located in Dayton, Ohio, came to see his old friend, Martin Fischer, hoping that the physiologist could explain why technicians and workers who had come into contact with tetraethyl lead, a compound added to gasoline to prevent engine knock, had suddenly become violently ill and died. The accidents were troubling because they presented a serious obstacle

to the future development of one of the most promising advances for both the oil and automobile industries.[14]

Beginning before World War I, Midgley and his boss, the famed inventor Charles Kettering, had been engaged in a search for a substance to add to gasoline to eliminate the violent knocking which occurred in cars using standard fuel. Critics of the time blamed Kettering's self-starter for the problem and called the vibrations, "spark-knock." Kettering and Midgley's scientific fox hunt, as they called it, ended in the discovery that tetraethyl lead, a compound produced in the laboratory, could eliminate the "noisy bugbear" of knock and effectively raise the engine's efficiency.[15]

The discovery of the effects of lead on the performance of the automobile proved extraordinarily promising. In February 1923, General Motors eagerly introduced the miracle gasoline at a service station in Dayton. The fuel's success was almost immediately apparent and word of its advantages spread quickly. Soon other service stations in both Dayton and Cincinnati began clamoring for gas containing

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[14]Doctor Robert Kehoe recounted events leading to the establishment of the Kettering Laboratory in an interview in his office, Nov. 1, 1978. See also, T. A. Boyd, Professional Amateur: The Biography of Charles Franklin Kettering (New York: E. P. Dutton and Co., Inc., 1957), 150-52 for a brief account of the problem and pp. 99-103 for a discussion of the knock problem.

[15]Ibid., Boyd.

tetraethyl lead. Determined to meet the increasing demand, General Motors laboratory in Dayton increased its production of the fuel. However, it soon became clear that the gasoline would have to be manufactured on a much larger scale. In the summer of 1923, General Motors sold the formula to the Standard Oil Company of Indiana which dubbed the fuel simply "ethyl." When the demand continued to grow, General Motors and Standard Oil of New Jersey joined together to form the Ethyl Gasoline Corporation, which intended to make the product available nationwide.[16]

The company's hopes were soon threatened by the danger which tetraethyl lead held for those who produced it. Initially the problem had gone undetected so long as trained laboratory personnel manufactured the compound. However when ordinary workers began to make and handle tetraethyl lead in large amounts there were tragic consequences. Thirty men in Dayton became seriously ill with lead poisoning and two workers died. Nor was this the full extent of the problem. Between September 1923 and November 1924 ten deaths had occurred, including two in Dayton, and between sixty and seventy cases of poisoning. Additional casualties occurred at the E. I. du Pont and de Nemours Co. where three

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[16]Body, pp. 142-58.

died and the Standard Oil Co. of New Jersey reported five deaths and one case of insanity from lead poisoning. Greatly alarmed at the reports, the United States Public Health Service ordered the distribution and sale of gasoline containing tetraethyl lead stopped in May 1925 and initiated an investigation.[17]

A year before that, however, at the first sign of trouble, Kettering had sent Midgley to see Martin Fischer to ask him to investigate the deaths and illnesses. Fischer who was then involved in studies of fatty acids declined to take on the problem himself. Instead he referred Midgley to his able young assistant, Robert Kehoe, who enthusiastically accepted the assignment.[18]

Kehoe was an unusual young physician; as a medical student his scientific ability was so well recognized that the faculty excused him from formal work in the clinical specialties reserved for senior medical students so that he could do pathological research. During his senior year, Kehoe performed most of the autopsies at both the Cincinnati

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[17]Irene A. Campbell, B.A., "The House That Robert A. Kehoe Built," in "Tribute to Robert A. Kehoe, M.D.," Archives of Environmental Health, 13 (August 1966):143-51, 143-45. Campbell quotes statistics given in a report by Alice Hamilton in JAMA 84 (May 16, 1925):1481-86. See also U.S. Public Health Service Bulletin (1926), 163.

[18]William F. Ashe, M.D., "Robert Arthur Kehoe, M.D." in "Tribute . . ." pp. 138-42.

General and Jewish Hospitals. Even before his graduation, he had already decided to enter on a career of teaching and research. After graduation from the Cincinnati Medical School, he was appointed an instructor in Martin Fischer's department of physiology.[19]

Kehoe was the ideal choice for the assignment of investigating the effects of tetraethyl lead on the human body because he had already previously experimented with heavy metal salts, including lead. Based on this knowledge of colloid chemistry, Kehoe challenged the then widely held assumption that heavy metal salts caused irreversible coagulation of proteins and thus permanent tissue damage in the body. In a series of experiments carried out early in 1920, Kehoe, using gelatin as a protein substance, showed that a properly chosen lighter metal salt could actually reverse the coagulation process.[20]

Two years later Kehoe sought to approximate more closely the actual conditions of metal poisoning to test his initial conclusions. Instead of inert gelatin, Kehoe now used human saliva because, as he later explained, "the activity of the enzyme is so characteristic of normal

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[19] Ibid.

[20] "The Effects of Heavy Metal Salts Upon a Protein and the Reversal of Such Effects," Reprint from The Journal of Laboratory and Clinical Medicine, 5 (April 1920), contained in Publications from the Kettering Laboratory, Vol. I, 1920-1939.

protoplasmic behavior . . ." As he suspected, saliva could both be poisoned with heavy metal salts and "cured," that is the process could be reversed by the addition of lighter neutral metal salts. He concluded that "the original question whether living material coagulated by heavy metals could be restored to function as well as to normal physical state through the action of salts of lighter metals may he proudly announced be considered answered." In conclusion he stressed that the primary goal in treating heavy metal poisoning was to restore the tissue to its normal function through the removal of the injurious agent. Like his mentor Martin Fischer, Kehoe sought to approach disease states through an understanding of the physiological mechanisms of the body and envisioned the doctor's task as intervening in and reversing the disease process.[21]

Kehoe was so convinced that metal poisoning could be successfully treated that when Midgley appeared on the scene describing cases of what was certainly lead poisoning, he was more than eager to help despite the fact that undertaking such an investigation conflicted with his teaching duties and meant commuting between Cincinnati and Dayton several times each week until the end of the school year

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[21]Kehoe, "The Activation of an Enzyme Poisoned by Heavy Metal Salts," Journal of Laboratory and Clinical Medicine VII (Sept. 1922), Kettering Laboratory Publications, V.I.

in June. That summer, Kehoe spent most of his time in Dayton studying conditions firsthand. Then in the autumn of 1924, in order not to interfere with his teaching responsibilities, Kehoe moved the research project to the Eichberg Laboratory of Applied Physiology at the College of Medicine.[22]

One of the difficulties Kehoe encountered at the outset of his investigation was that very little was known about lead poisoning beyond the recognition of its symptoms. In fact, the leading authority on industrial medicine in the United States, Professor Alice Hamilton of the Harvard medical faculty, acknowledged in 1925 that the entire problem awaited exploration. Virtually nothing was known of the physiology of lead in the body, how it entered the tissues, where it was stored and exactly how it produced its damage.[23] Until these questions were answered, Kehoe knew there was little hope for rational treatment of lead poisoning.

Although much was known of the symptomatology of lead poisoning, Kehoe at first thought that the cases involving tetraethyl lead differed from the descriptions usually given. Ordinarily objective symptoms included skin pallor,

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[22]Campbell, p. 143.

[23]Alice Hamilton, A.M., M.D., Industrial Poisons in the United States (New York: Macmillan Co., 1925), p. 20. Dr. Hamilton was assistant professor of industrial at Harvard Medical School and before that special investigator of poisonous industries for the U.S. Bureau of Labor Statistics.

subnormal blood pressure and temperature, loss of weight, tremors, and lead in the urine as well as the characteristic lead line on the gums of the mouth. Victims complained of insomnia which could range from a fitful sleep marked by muscle twitching and nightmares to complete wakefulness. There was also nausea, anorexia and vomiting, all of which tended to occur in the morning and diminish as the day progressed; vertigo and headache which patients described as a dull, full feeling; and generalized muscle weakness.[24]

While Kehoe found many of these symptoms present in the cases of tetraethyl lead poisoning that he examined, they were much more intense and yet surprisingly there was no evidence of the lead line on the gums so typical of lead poisoning. Still, by the end of 1924 when he presented his initial findings in JAMA Kehoe nevertheless concluded that the cases involving tetraethyl lead were very much like other types of lead poisoning. What made these different, he argued, was the rapid rate of absorption of tetraethyl lead through the skin and lungs, a consequence of its peculiar chemical and physical properties, resulting in the

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[24]Kehoe, "Tetra-Ethyl Lead Poisoning: Clinical Analysis of a Series of Nonfatal Cases," JAMA, 85 (July 11, 1925):108-10.

consequent rapid onset of symptoms. In addition, the tendency of tetraethyl lead to settle in the tissues of the central nervous system and liver added to the dramatic clinical picture in which symptoms such as twitching, vertigo and weakness were very marked. Tetraethyl lead was unique, Kehoe concluded, because of the very fact that it was so lethal. Minimal doses could kill a laboratory animal within twenty-four to seventy-two hours. Inhalation of high concentration of the lead vapor could kill a worker in a matter of only a few days.[25]

Kehoe's findings persuaded him to devote himself initially to the problem of safeguarding the health of workers in the industry before going any further in his study of lead's activity in the human body. He knew that following the accidents in Dayton, a representative from the Ohio Factory Inspection Department found that unsupervised workers had quickly discarded gloves and respirators they had been given for their protection. In addition he knew that the compound was mixed and bottled under an ordinary laboratory hood without proper ventilation.[26]

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[25]Ibid., pp. 108-10.

[26]Campbell, p. 144. See also Alice Hamilton's report, JAMA 84 (May 16, 1925):1481-86 and Public Health Service Bulletin 163, 1926.

Kehoe knew that much more was involved in preventing tetraethyl lead poisoning than the simple precautions which the factory inspector found lacking. First, he devised protective clothing which covered the worker so completely that no area of skin could come into contact with the dangerous compound. He also provided workers with masks and instructed men in their effective use. In order that accidents would not occur through carelessness, Kehoe set up a special educational program to instruct both supervisors and workers in the dangers of lead poisoning and how to avoid it. Still not satisfied, he established a surveillance program to insure that the measures were enforced. Over the course of two years Kehoe reviewed every job involving the handling of tetraethyl lead and issued individual precautions whenever necessary. He also studied methods of mixing and transporting the gasoline and with the help of company engineers and managers he devised a set of detailed instructions for such complicated operations as cleaning storage tanks.[27]

Anxious to avoid future accidents and to protect its employees, the Ethyl Gasoline Corporation adopted Kehoe's safety program in its entirety and to prevent future

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[27]Kehoe, "An Illustration of Industrial Hygiene," Archives of Environmental Health 8:378-83 (March 1964), p. 381-82. See also, Campbell, p. 145 and Ashe, pp. 138-39.

accidents offered him the position of medical director. Kehoe told the company's president, E. W. Wells, that he would accept the post only if the university agreed to the terms of his contract. When the university agreed, Kehoe accepted the post with Ethyl and continued to teach and do research at the medical school. Ethyl Corporation also agreed to underwrite the cost of his research on lead. This new arrangement represented a new phenomenon in the college of medicine, a professor accepting an outside position, not primarily to supplement his income but instead to advance the community's well being through preventive medicine.[28]

Before Kehoe could begin his study of the physiology of lead he faced a singular problem. He had been educated as a physician and had specialized in pathology and physiology. Yet basically he lacked the analytic chemical skills necessary to cope with the investigation he wished to undertake. Fortunately for him, in 1924 the General Motors Laboratory moved from Dayton to larger quarters in Detroit closer to the automotive industry. At the time two of the laboratory's top chemists, Frederick Thamann and his assistant, Jacob Cholak, did not want to move to Detroit.

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[28]Interview with Dr. Kehoe, Sept. 30, 1981.

Seeing a golden opportunity, Kehoe offered the two positions. When they accepted, Martin Fischer provided the trio with space in his laboratory on the second floor of the medical college building and the work, financed by the Ethyl Gasoline Corporation and its parent company, General Motors got underway.[29]

From the beginning of his work on tetraethyl lead, Kehoe was troubled by the fact that some workers who had suffered exposure failed to develop symptoms, while others became violently ill. He wondered if the body were capable of excreting lead as a normal physiological function. To find out, Kehoe and his colleagues recruited a random group of white males from an employment agency in Cincinnati, and made an analysis of their urine and stool specimens. The results revealed "an almost uniform occurrence" of lead excretion. It was especially noteworthy that those tested had had no history of obvious exposure to lead.[30] When Kehoe published his findings he found himself at odds with Drs. Joseph Aub and Lawrence Fairhall at Harvard who were also working on the same problem under a grant from a white lead manufacturer obtained by Alice Hamilton. Based on

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[29]Ibid.

[30]Kehoe, Edgar Graham, Thamann and Lester Sanders, M.D., "The Excretion of Lead by Normal Persons," Kett. Lab. Pubs., V. I. Graham was with the Ethyl Gasoline Corporation.

their findings, the two Cambridge scientists argued that lead did not normally occur in the body.[31] As a result, Kehoe, who knew that the findings of his first study were at best tentative, began planning a more exhaustive investigation.

For Kehoe the thought that man excreted lead naturally formed the beginning of a series of studies to chart "The Behavior of Lead in the Animal Organism." In a special series of animal experiments, Kehoe administered lead to rabbits and then studied their blood, urine and feces to determine lead content. To his surprise, Kehoe found that the animals reacted differently at different times to the same degree of exposure. He then acknowledged that the most difficult problem in prevention would probably center on a like variability in the effect of lead exposure on man.[32]

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[31]Joseph C. Aub, Lawrence T. Fairhall, A. S. Minot, and Paul Reznikoff, Lead Poisoning (Baltimore: The Williams and Wilkins Company, 1926), pp. 43-52. Although the authors discuss at length the portals of entry they do not admit that lead occurs naturally in the body at all times. Interestingly enough the authors, although they discuss the works of other researchers, ignore Kehoe altogether.

[32]Kehoe and Frederick Thamann, "The Behavior of Lead in the Animal Organism I," American Journal of Public Health XVIII: (May 1928) in Kett. Lab. Pubs. V. I, pp. 555-64. This was an address before the Industrial Hygiene Section of the A.P.H.A. in Cincinnati, Oct. 21, 1927.

Kehoe and his co-workers continued to focus their attention on lead excretion, hoping that it would prove a prime indicator in determining the degree of exposure. In 1929, four years after their initial study showing that lead excretion was normal, Kehoe and Thamann published the results of yet another study conducted among seventy-one medical students, who also had had little or no contact with industrial lead. The new study again surprisingly revealed that lead was excreted much more readily among nonindustrial workers than was commonly thought. Anticipating criticism, Kehoe requested the U.S. Public Health Service to verify his results.[33]

Four years after Kehoe's research on lead poisoning began, the problem seemed larger than ever, requiring more time, staff and equipment for its solution. Instructed by Kehoe, who spoke passionately of need for solid facts to replace breezy hypotheses, three companies, Ethyl Gasoline Corporation, E. I. du Pont and Frigidaire, a subsidiary of General Motors, offered the University of Cincinnati one

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[33]Kehoe and Thamann, "The Excretion of Lead," JAMA, 92 (April 27, 1929):1418-21. The study of lead excretion did not end here. In June 1934, Kehoe read a paper before the A.M.A.'s section on Preventive and Industrial Medicine in which he brought the group up to date on the laboratory's findings. See Kehoe, Thamann, and Cholak, "Normal Absorption and Excretion of Lead," JAMA 104 (January 12, 1935): 90-92.

hundred thousand dollars in June 1929 to build and equip a laboratory adjacent to the medical college. Plans called for the laboratory to be devoted exclusively to solving the problems of industry.[34] Anticipating the criticism from his colleagues that the laboratory was nothing more than a handmaiden of industry, Kehoe established strict rules under which the laboratory would disseminate the results of its labor to the academic community as well as the sponsoring company. He also forbade companies to use any of the laboratory's findings in advertising and reminded his critics that the university was solely responsible for operating the laboratory and appointing its staff.[35]

Despite Kehoe's concern, the announcement of the laboratory's creation was praised by members of the medical profession in Cincinnati. Speaking for the Academy of Medicine, the Cincinnati Journal of Medicine lauded the corporate sponsors for seeking a "permanent solution" to the health problems presented by industrial chemicals. Citing Kehoe's research on lead, the article pointed out that Kehoe's staff had also conducted studies of freon, a highly toxic compound containing fluorine, before Frigidaire

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[34]Board of Trustees Minutes, Dec. 3, 1929 and Jan. 7, 1930.

[35]Ibid., Dec. 3, 1929 and Jan. 7, 1930.

began using it as a refrigerant. The establishment of a laboratory and the policy of testing compounds before marketing them, the journal confidently opined, would prevent accidents like the one with tetraethyl lead from occurring again. In this way, it concluded the university would fulfill the mission which President Dabney envisioned for it as advisor to the community. Providing its expertise to find solutions to pressing industrial health problems in the neutrality of an academic setting.[36]

Confidence in the laboratory's mission was also voiced by three supporting companies. They fully expected that their problems could and would be resolved. As evidence of this they stipulated that they could at any time cancel their agreement with the university to maintain the laboratory. In that event, the university would retain the use of the building while the companies would claim the laboratory's equipment.[37]

Early in the spring of 1930, ground was broken for the new facility. President of the Ethyl Gasoline Corporation, E. W. Wells, suggested that it be named after Charles Kettering, a man who spent his life in search of answers.

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[36]"College Notes," C.J.M., Jan. 1931, pp. 600-02.

[37]"College Notes," Cincinnati Journal of Medicine, Nov. 1929, 439-40.

A modest man, Kettering objected strenuously. This would be "a terrible mistake," he later wrote to the university's board of directors,

> . . . this laboratory has nothing whatever to do with me, and the entire funds have been subscribed from industrial organizations. I suggest that you call this the Industrial Laboratory, as I am sure that you would weaken your position and embarrass me and otherwise make a terrible mess of this situation if you left the name as suggested in your letter. I appreciate the honor conveyed in your good intentions,

he said in closing, "but I disagree one hundred percent." In the end, however, Kettering was persuaded and allowed the university and the sponsors to honor him by naming the facility the Charles F. Kettering Laboratory.[38]

In both its setting and design the Kettering Laboratory was an integral part of the College of Medicine. Samuel Hannaford, architect both of the college building and of the General Hospital, designed the new four story structure in similar fashion and placed it adjacent to the college. In keeping with Kehoe's suggestions and hopes for its future, the laboratory's rooms were made large enough to accommodate medical students.[39]

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[38]Board of Trustees Minutes, Dec. 3, 1929 and Jan. 7, 1930.

[39]"College Notes," Journal of Medicine, April 1930, p. 93.

On December 12, 1930 when the Kettering Laboratory opened its doors, its role in medical education still lay in the future. Of immediate concern to Kehoe, who continued to teach in the department of physiology, and his staff was devising methods for studying the behavior of lead in the human body. Hoping that lead output might be used as a barometer to differentiate normal from abnormal, Kehoe still had to prove beyond doubt that the body normally and naturally contained some amount of the element. He had already concluded that varying degrees of lead output, some resulting from intoxification, were a product of the highly organized and industrialized nature of American life, a fact which the growth of industry since the end of World War I underscored. Now he needed to find a group of people untainted by industrialization, Kehoe thought of the simple peasants he had seen in Mexico. Remembering that numerous agricultural villages existed there unscathed by the twentieth century, Kehoe traveled to Mexico City where he spoke with public health officials about his project. After receiving much advice, Kehoe chose to study the inhabitants of the small Indian village of Ischlawaca, not far from the town of Taluca which was about one hundred miles north of Mexico City. Before leaving Mexico City, Kehoe was warned by the public health officers to arm himself for protection

against bandits who frequented the region. And so, armed with a revolver and wearing a cartridge belt, accompanied only by an interpreter, Kehoe set out for the tiny village.[40]

The society he found there was totally self-sufficient. Natives tended flocks of sheep, raised their own crops and made their own clothing and simple articles necessary for everyday life. For Kehoe this group of people was perfect to test his theory that if lead occurred naturally in the earth, man also absorbed and excreted it. Having found the ideal group for his study, Kehoe now faced the difficulty of explaining to the males of the village that he wished to collect their urine and excreta for examination. To these simple peasants such a request was outrageous, truly an indication of the strangeness of the outside world. However, they were amiable and since Dr. Kehoe obviously meant them no harm, they agreed and with a good deal of hilarity complied with his puzzling request. Later, returning to Cincinnati with five boxes containing the urine and feces of his Indian subjects, Kehoe encountered a similar problem trying to explain his project to an incredulous customs official who waved him on without further examination or questions.[41]

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[40]Interview with Dr. Kehoe, 8/18/81.

[41]Ibid.

Back in the Kettering Laboratory, Kehoe found that the urine and feces of his Indian subjects did indeed contain small amounts of lead. Lead absorption, he quickly concluded, was not simply a pathological abnormality accompanying industrialization. What remained unknown, however, was what constituted normal absorption and whether the kidneys maintained the body's equilibirum and protected it from eventual lead poisoning. Here Kehoe and his staff encountered a problem of technique. Methods of lead detection at the time were to say the least imprecise, a situation which had to be rectified before the investigators could determine normal limits with any degree of certainty. In 1935 the best method of detection involved the quantitative separation by precipitation of lead in samples of excreta or tissue. However, this technique was blind in that one could never be certain of having removed all of the lead contained in the sample. Furthermore, there was a problem of contaminating the original sample with yet more lead contained in glass test tubes, needles, syringes and various laboratory solutions. Above all procedures had ot be standardized so that results could be verified.[42]

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[42]Ibid. Also see Kehoe, F. Thamann and J. Cholak, "Lead Absorption and Excretion in Primitive Life," Journal of Industrial Hygiene, XV (Sept. 1933):257-72.

One new technique which promised to reveal precisely the amount of lead contained in a given sample was developed by Kehoe's colleague Jacob Cholak who used a spectrograph to measure lead particles directly by means of photographing their inherent electromagnetic qualities. The spectrograph proved able to detect quantities of lead so small that the chemical method of precipitation would miss. Consequently, a variety of samples such as bone fat or foods could be quickly and accurately tested.[43]

Determining the normal limits of lead excretion was a knotty problem, one which lent itself to statistical analysis. For this aspect of the solution, Kehoe turned to another colleague, Willard Machle, a physician who first joined the laboratory's staff in 1930 as a research associate in bacteriology. Machle maintained that no one simple definition of normal applied to everyone. Rather, he argued limits varied according to occupation and exposure so that a housewife, a peasant in Mexico, and a worker in the lead industry would demonstrate different levels of lead excretion. In the same way the lead worker might be expected to have a higher tolerance for lead, absorbing greater amounts

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[43]Kehoe, "The Determination of Lead in Excreta and Tissues," American Journal of Clinical Pathology 5:13-20. Kett. Lab. Pubs., V. I.

before he actually demonstrated symptoms of lead poisoning. In order to determine normal limits for a given occupational group, Machle suggested the use of quantitative biometrics, statistical analysis of biological observations made of the members of various groups. Such information could then be used to project limits of normal lead excretion for every worker in a particular job and to measure deviation and perhaps dangerous levels of exposure.[44]

Central to Machle's thought was the idea that factories constituted distinct environments, worlds unto themselves, each defined by its own peculiar environment and hazards. Industrial hygiene seemed a far more complex field of study than ever before, presenting investigators with the new problem of industrial poisons, whose numbers multiplied daily, dangers which joined the traditional nuisances of dust, poor lighting and accidents to threaten the work force as never before. The answer appeared to lie in carefully policing the entire industrial environment to ferret out the seemingly endless problems that existed there.[45]

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[44] W. Machle, M.D., "The Use of Statistical Methods in Industrial Hygiene," Industrial Medicine (June 1936):318-22.

[45] Lawrence B. Chenoweth and Willard Machle, Industrial Hygiene: A Handbook of Hygiene and Toxicology for Engineers and Plant Managers (New York: F. S. Crofts and Co., 1938), p. 21.

Machle was by no means alone in his concern. Companies other than the original sponsors began coming to the Kettering Laboratory with problems, a fact which attests to industry's awareness of its responsibility to safeguard the health of employees and consumers alike. In 1935 for the first time Ethyl, du Pont and Frigidaire gave permission for the laboratory to accept an outside contract to do a study to determine the amount of lead contained in a certain brand of chewing gum.[46] Three years later, Monsanto Chemical Company began to bring work to the laboratory and quickly became an important client.[47] In 1939, Mead Johnson awarded the laboratory $5,000 to expedite research on the occurrence of fluorine in common foods and beverages.[48] The following year the same company asked the laboratory to investigate the dangers of "methocel" and "ethocel," two cellulose preparations which it hoped to market for use in food, drugs and cosmetics.[49]

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[46]Board of Trustees Minutes, February 3, 1931.

[47]Ibid., February 1, 1938.

[48]Ibid., May 2, 1939.

[49]Ibid., June 4, 1940.

The growth of the Kettering Laboratory was manifest not only in the number of studies it conducted but in the evolution of the size of its budget and staff as well. In 1930, its first year of operation, the laboratory's budget totalled $42,226 and the staff numbered eleven including the animal caretaker.[50] By 1932 the laboratory's staff had increased to twenty and its budget had grown to $54,961.[51] At the end of the decade the budget contained $83,290 to support the work of twenty-five staff members.[52]

Every year as new companies sought the laboratory's services the increased number of projects required more and more of Dr. Kehoe's time and energy. The conflict between directing the laboratory and his teaching responsibilities finally grew to such a point that in 1938 Kehoe requested that the dean of the medical college relieve him of all of his teaching duties in the department of physiology. In effect, Kehoe severed his relationship with the department and thereafter the Kettering Laboratory stood as an autonomous unit in the college of medicine.[53]

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[50]Ibid., January 7, 1930.

[51]Ibid., February 2, 1932.

[52]Ibid., February 7, 1939.

[53]Ibid., February 1, 1938.

Although Kehoe held the title of research professor, other members of the laboratory's staff received no such distinction and held no appointments in the university. Kehoe wanted the laboratory recognized as an integral part of the medical school performing essential medical research, the very basic preventive medicine and sought academic recognition for members of his staff.[54]

The request drew opposition from various members of the medical faculty who thought that Kehoe's ties to industry were too close and that the laboratory was little more than a handmaiden to the corporations which supported it. Kehoe confidently rebutted that without the data and the finances supplied by industry, investigators could hardly begin to deal with the manifold toxic problems arising from industrial manufacturing.[55] In 1941 after several years of debate, Kehoe's efforts to gain academic recognition for members of the Kettering Laboratory finally met with success when the university agreed to grant

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[54]Ibid., June 6, 1938. In 1937 Kehoe was appointed a Fellow of the graduate school. Dean Louis T. Moore wrote that Kehoe's "position as director of so important a research laboratory is of itself a reason for including him in the list of Fellow. In addition to his direction of the Laboratory, his own researches in the industrial problems of hygiene and especially the results of lead poisoning have attracted wide recognition of their value." See Board of Trustees Minutes, June 1, 1937.

[55]Interview with Dr. Kehoe, August 18, 1981.

laboratory personnel university appointments with appropriate academic titles. Frederick Thamann, Jacob Cholak and Willard Machle were named associate research professors while others in the laboratory were appointed assistant research professors. The university, however, was not completely generous. In granting the appointments the board of trustees made it clear that should the laboratory cease to exist the university would be under no obligation to find comparable positions in the medical school for the staff of the laboratory.[56]

Kehoe, who was certain that the laboratory would continue to flourish, considered the board's action as an endorsement of his philosophy. Indeed, by 1940 he had begun to plan for the education of industrial physicians and hygienists to serve a variety of industries. However, Kehoe was hesitant to launch such a program because he was uncertain as to its acceptance by industry or by his colleagues in the medical school, many of whom still complained of the close ties of the Kettering Laboratory to industry. With the outbreak of World War II, Kehoe put off making a decision.[57]

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[56]Board of Trustees Minutes, February 11, 1942.

[57]Ashe in "Tribute . . .," P. 141.

Wartime demands weighed heavily on the laboratory. Recognizing Kehoe's expertise on lead, the armed services approached him with requests for studies of pesticides and their propellants, many of which contained lead. The government also asked Kehoe to devise a safe method of cleaning gasoline tanks so thoroughly that they could be used to transport drinking water. Yet another problem in which the laboratory became involved concerned preservatives added to keep foods edible for prolonged periods of time. The government could not permit their use without first knowing something of their effects on soldiers consuming them. The laboratory also engaged in studies of the ability of metal containers for food to impart toxic material to their contents. With the increase in work during the war, the staff of the laboratory was increased to thirty-nine and the budget grew to $140,280.[58]

Kehoe's determination to establish an educational program at the Kettering Laboratory increased during the war. Shortly after the conclusion of the war, he used his presidential address to the American Industrial Hygiene Association to outline a new educational program for industrial medicine. Industrial hygiene, he told his

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[58]Campbell, pp. 147-48. Also, Board of Trustees Minutes, February 1, 1944.

audience, needed a contingent of specialized persons of physicians, engineers, toxicologists, physiologists and technicians to work in the new health discipline whose goal was to understand and control the working environment. First and foremost, Kehoe insisted that the work of everyone in the field depended entirely on research, a fact which he thought many members of the American Industrial Hygiene Association still failed to recognize. New materials, he argued, particularly the burgeoning production of petrochemicals had to be tested before marketing; a task which could only be done in a properly equipped laboratory. Chemistry, Kehoe warned, had as much ability to harm as to serve until scientists and physicians alike had to understand both the remote and immediate physiological effects on the body of the absorption of a wide variety of industrial chemicals. Warming to his task, Kehoe outlined a variety of other areas for research, including job related fatigue and noise levels as well as variations in humidity, air motion and lighting. Kehoe even suggested that studies ought to be done on atmospheric pressure and the effects of vibrations and increased gravity on the human body. All of these problems, he insisted, had to be understood and

resolved before the environment of the factory could truly be controlled.[59]

Industrial medicine as Kehoe envisioned it was a subject reserved for graduate study. To advise and guide industry demanded an extensive program of study. In this new and highly specialized field practitioners needed scientific, administrative and statistical skills. Kehoe's concept of industrial medicine involved an entirely new approach to the practice of medicine. Traditionally doctors treated sick patients directly and on an individual basis. In industrial medicine, however, the relationship was indirect as the physician studied and sought to treat and control the environment of many to prevent them from becoming ill. Earlier, in 1930, sponsors of the Kettering Laboratory and Kehoe himself thought that one day the problem of dealing with industrial hazards might be solved allowing the laboratory to be disbanded.

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[59]Kehoe, "The Industrial Environment in Industrial Medicine," delivered April 10, 1946. See also, Kehoe, "Medical Education, Research and Practice in Relation to Industrial Health," The Medical Press and Circular, January 16, 1946 (London). Kehoe is also quoted extensively in Johnstone, Occupational Medicine, 1948, p. 70. See also, Kehoe, "Medical Education in Relation to Industrial Health," Occupational Medicine 4 (August 1947):177-81, Kettering Laboratory Publications, V. 3.

> to study man in his working environment, to investigate hygienic problems arising from the industrial environment, and to provide professional training for men who are interested in the principles and practice of Industrial Medicine and Industrial Hygiene.

The institute's medical faculty was composed of staff members of the laboratory as well as professors from the medical school, law school and departments of business administration and engineering. It was one of four institutions in the U.S., including the University of Pittsburgh, New York University and the University of Colorado offering such specialized training.

At the beginning, the three year course of study was open only to physicians wishing to become industrial medical directors, a need which Kehoe then saw as being critical. Applicants were required to hold a degree from a class A medical school and to have completed an internship in a hospital approved by the A.M.A. During the first two years of "intense preliminary training" students took courses in physiology, toxicology, the principles of safety as well as the "physiological design of protective equipment." Students also learned to conduct a job analysis focusing on hazards encountered in a single job during the course of a day's work. Because occupational diseases fell within every medical specialty, students studied industrial aspects of a variety of medical subjects including dermatology, psychiatry, otolaryngology, etc.

In Kehoe's educational scheme students would begin by studying the principles and methods of environmental appraisal and the mechanisms of physiological response in the Kettering Laboratory where they could gain an appreciation of the dangers of a wide variety of industrial poisons. Once their scientific foundation was complete, students would begin clinical practice first in the clinics and wards of General Hospital where they would observe and care for patients with various occupational diseases. Just as in medical school they would be responsible for taking histories, conducting physical examinations and doing the appropriate laboratory tests. Now, however, in addition, they would treat patients as well. Finally students would go out to cooperating companies in various regions to gain practical experience under the supervision of practicing industrial physicians, Kehoe also planned for a myriad of elective courses including medico-legal aspects of industrial practice, principles of business administration, and even fundamentals of labor relations.[60]

In 1947, the Institute of Industrial Health opened at the Kettering Laboratory of the University of Cincinnati

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[60]William F. Ashe, "Industrial Medical Education," Industrial Medicine 18 (February 1949):55-58. Ashe was Associate Professor of Industrial Medicine; pamphlet, "The Institute of Industrial Health," 1947.

Both in its approach to the environment and in its armamentarium of knowledge, industrial medicine represented a new way of studying medicine. Students in industrial medicine cut across the spectrum of individual medical specialties to reorganize medical knowledge in a different way for new ends, to understand and finally to control the industrial environment.[61]

In 1948, with its educational program underway and industrial research growing, the Kettering Laboratory was expanded by a new wing at the cost of $640,000, money made available by fifteen sponsoring industries. A year later the laboratory and its institute joined the Department of Preventive Medicine to create a new Department of Preventive Medicine and Industrial Health. The new department comprised six divisions: preventive medicine, clinical medicine, toxicology, forensic pathology, industrial hygiene technology, and bibliographic research based on an extensive library.[62] The department's creation was an approach to medical education born of the notion that industry had problems which were distinctive and threatening to society, problems which industry was responsible for solving.

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[61]Kehoe, "The Kettering Laboratory in the Department of Preventive Medicine and Industrial Health," typed for publication in Enquirer, May 25, 1952.

[62]Ibid.

This new concept was quite different from the ideas which motivated Dr. Otto Geier to plan for the creation of a Department of Industrial Medicine and Public Health in 1919. Then Geier and his colleagues spoke of improving industrial relations through better health and safety measures. They hoped to reinforce the bonds of mutual concern and respect between employer and employee and in the end to contribute to the well being of the community at large.

When the Charles F. Kettering Laboratory of Applied Physiology was established in 1930 it was sponsored by companies like the Ethyl Corporation which had a specific problem concerning a toxic agent. Both the founders and Dr. Kehoe optimistically expected that these toxicological problems were temporary and that a general solution might be found to deal with them.

During the thirties that idea disappeared as studies of tetraethyl lead led the laboratory into previously uncharted terrain. The expanded knowledge of the ramifications of the use of lead coincided with a new view that industry was not a single factory or a certain type of factory with a limited number of hazards but rather a complete environment different from any other which man inhabited, one in which workers were ceaselessly exposed to

a variety of harmful influences, mechanical, chemical and atmospheric. Kehoe and his staff recognized that first they would have to evaluate and understand the industrial environment before they could master it.

During the late forties and early fifties industrial medicine became recognized as a specialty with specific educational requirements in response to the need to understand the industrial environment. Comprehension of the problems involved were totally dependent on research conducted both in the laboratory and the factory. Students in Kehoe's new department of preventive medicine and industrial health were not only taught to set up their own research projects but the faculty was composed primarily of scientists. Here was full-time medicine at its best according to Abraham Flexner's belief that those who taught best were men engaged in research and the advancement of medical science. In a sense it is ironic that from the beginning of the study of industrial medicine at the University of Cincinnati, one of the best expressions of full-time medicine at the medical school, Flexner played no role in fostering or supporting the development of the department.

Conclusions

The elements of what Charles Dabney, Christian R. Holmes and Abraham Flexner called modern scientific medicine were largely in place in American medical schools by the nineteen-thirties. These three men looked back to the eighteen-seventies for the beginnings of what proved to be a virtual revolution in medical education. At first tentatively and then with increasing conviction and rapidity, innovations such as the graded curriculum, laboratory sciences and strict admission requirements were introduced. Public attention was drawn first to Harvard where President Charles William Eliot introduced the graded curriculum in 1870, followed by a series of sweeping reforms designed to improve medical education. Elsewhere but more quietly medical faculties in New York, Philadelphia and Cincinnati acted out of similar dissatisfaction with the old ways imposing changes premised on a new concept of education in general and medical education in particular.

In Cincinnati, Miami Medical College was the first to offer a graded curriculum in 1869. Two years later the Medical College of Ohio followed suit. In both cases

the programs were optional. Shortly after the introduction of the graded curriculum, both the Ohio and Miami faculties established more courses in laboratory science in order that medical students could improve their understanding of the "real nature" of disease.

In the mid-eighties, the importance and utility of laboratory science in medical education changed. Formerly useful for its ability to illustrate symptoms, science gained new significance because of its newly discovered underlying principles, immutable laws which quickly became the sine qua non of modern medical practice. In this context, the curriculum was rearranged beginning with science and progressing to its clinical application.

The identification of disease as an objective reality was accompanied by a similar difinition of the study of medicine as a distinct discipline. Increasingly educators spoke of the need to agree upon its content and regulate the medical curriculum. The first effort at this was made in 1876 with the establishment of the American Association of Medical Colleges, an effort which failed when leaders pressed for change too quickly. However, individual colleges continued to adopt reforms, particularly in the areas of admission and graduation requirements. For example, by the late eighties, admission to the Medical College of Ohio was

limited to those who graduated from high school and could demonstrate proficiency in grammar, basic mathematics and the fundamentals of chemistry.

In 1896, the Medical College of Ohio became the Medical Department of the University of Cincinnati, the only institution so designated. Prior to that time, all three of the regular medical school in the city, Miami, Ohio and the Cincinnati College of Medicine and Surgery had been loosely affiliated with the municipal university in a move which both denoted the place of medicine in higher education and which was designed to make Cincinnati a great urban center of education. Although the Medical College of Ohio continued to conduct its own affairs after joining the university, the contract between the two institutions allowed for the eventual submission of the college to the larger university.

At about the same time, the state of Ohio began to legislate on matters of medical education. In 1884, the state created a Board of Medical Registration and Examination. In the beginning, the board acted only to register practitioners within the state and graduates of all but a few medical schools

were exempt from examination. By the 1890's, however, the board began to regulate admission to the state's medical schools by issuing certificates to those chandidates who met certain well-defined standards.

Not only the state and the university, but the medical profession itself acted in the nineties to gain control of medical education. In 1893, the Association of American Medical Colleges was formed on the initiative of several medical faculties in Baltimore. At the first meeting, delegates agreed that members should adopt a three-year graded curriculum, written and oral examinations, laboratory instruction in science and strict admission requirements.

Shortly after the turn of the century in 1904, the American Medical Association established the Council on Medical Education, a permanent body headed by Arthur Dean Bevan and charged with coordinating the reform movement in medical education. Bevan and the council moved quickly to set minimum standards for medical colleges and in 1907, initiated inspections of schools in this country.

The decision to accept regulation whether by the medical profession, state government or the university was not an easy one for the Medical College of Ohio. Rather, there

were many difficulties, an indication that while the old ways no longer worked, new methods and values were still in the making and not easily endorsed. The problem became acute when Howard Ayers, who under new by-laws became president of the University of Cincinnati in 1899, attempted to exercise his broad new powers over the medical faculty. What ensued was a protracted tug-of-war between the domineering and not always tactful Ayers and a medical faculty determined to maintain its traditional independence. In the end, Ayers was dismissed from office in 1904.

Charles William Dabney, his successor, was much more successful extending the university's authority over the medical department. Instead of confronting faculty members with his presidential perogatives, Dabney clearly articulated the place and the role of the medical college not only in the university but in society as a whole. To Dabney, the medical college was part of society with a responsibility to educate competent physicians and an obligation to submit to its jurisdiction as well. Dabney's arguments convinced the medical faculty once and for all that its interests were one and the same with those of the university. Acting out of his view of a society made up of interrelated, interdependent parts, each with its own

functions and obligations, Dabney managed in 1909 to merge the Medical College of Ohio with Miami Medical College under the auspices of the university.

That same year, Abraham Flexner visited the new Ohio-Miami Medical College collecting data for his report to the Carnegie Foundation for the Advancement of Teaching, Medical Education in the United States and Canada. He was impressed with Dabney's efforts to create a modern scientific school of medicine and, based on the president's plans, gave the school a favorable review. In the years that followed, Flexner, who was appointed secretary of the General Education Board in 1911, watched with interest as Dabney and Dr. Christian R. Holmes, who became dean of the medical school in 1913, waged a determined campaign to win control of the city's new General Hospital and named the first fulltime clinical professor in the college of medicine, Roger S. Morris, to head the department of medicine.

In 1919, Flexner took steps to obtain a large grant for Ohio-Miami on the condition that the clinical faculty be reorganized on the fulltime basis. However, it is important to note that while Flexner and the General Education Board helped to create a new environment for the study of

scientific medicine in Cincinnati, it was by no means the only factor. The success of fulltime medicine depended on a variety of factors. In surgery the establishment of fulltime medicine, although supported by Flexner, was almost wrecked by the personality of Dr. Heuer who tried to impose the system on the school and the medical community. While he succeeded, Heuer not only antagonized the medical faculty but incurred the enmity of most of the local surgeons as well, a fact which to this day mars the relationship between the school and the medical community. In pediatrics, the internal history of the development of pediatrics locally under Dr. Benjamin Rachford proved as important as the advice given by Flexner and the support of the General Education Board. In establishing the fulltime system in both departments, local philanthropists played as important a role (in the person of Mary Emery, William Cooper Procter, Bette Fleischmann Holmes and others) as did the aid given by Flexner. Indeed they complimented each other.

The fulltime system in Industrial Medicine, on the other hand, grew out of a separate series of factors again having to do with the personalities and views of such people as Dr. Martin Fischer and Dr. Robert Kehoe as well as the special concerns of industry that brought important monetary

support to aid the development of the new department.

The history of the establishment of the various fulltime clinical departments in the College of Medicine at the University of Cincinnati demonstrate that the so-called Flexnerian revolution in medical education was a far more complex phenomenon than hitherto suspected. It is clear that in order to understand this revolution, in medical education, much more research needs to be done on the development of fulltime departments in the various other institutions supported by Abraham Flexner and the General Education Board.

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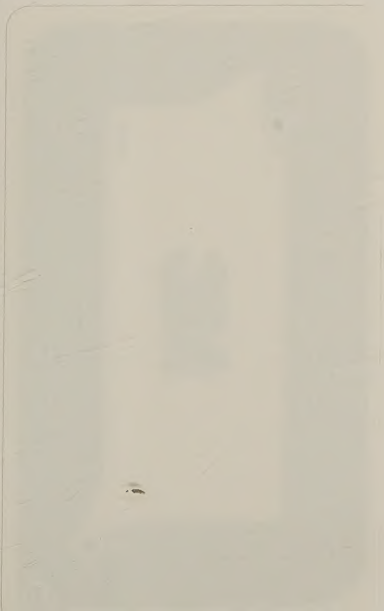
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